A SYSTEMS MODEL FOR ANALYZING THE WECHSLER INTELLIGENCE SCALE FOR CHILDREN--REVISED

By

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A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

UNIVERSITY OF FLORIDA

1981

ACKNOWLEDGMENTS

I wish to express my deep appreciation to the members of my doctoral committee for the support and encouragement provided in the preparation of this dissertation. Dr. John M. Nickens, chairmen of the committee, provided direction and offered encouragement in the creation of the systems model. Dr. James A. Hale, whose critical reading improved the presentation, and Dr. Robert S. Soer, who has been a continuous source of inspiration, are offered heartfelt thanks. Dr. Herman Lam helped make the systems model a reality. For that I am very thankful.

A special debt is acknowledged to the administrators of exceptional programs and administrators of school psychological services throughout Florida. Their contribution as respondents is deeply appreciated.

I am eternally grateful to my husband, Frank, and our children for their encouragement, love, and devotion. Their faith in me has been, and will be, a continuous reward.

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March 1981

Chairman: John M. Nickens
Major Department: Educational Administration and Supervision

The problem of this study was to develop a systems model for producing psychological reports for students who are administered the widely used Wechsler Intelligence Scale for Children--Revised (WISC-R). A second problem was to evaluate the model based on the quality of the psychological reports produced by use of the model.

Four major variables were identified as important in the analysis of WISC-R results and in preparing psychological reports for students. These are scores for each of the 10 subtests of the WISC-R, student age groupings, analytical statements about the student's intellectual ability, and statements of amelioration strategies.

The relationships between these four variables were determined by a literature review and these relationships incorporated in the systems model. Specifically, the resulting systems model accepts as input the student's birth date, test date, and raw WISC-R scores on each

of the ten subtests. Decision points based on these values lead to selection of appropriate analytical statements about the student's level of intellectual abilities and selection of appropriate statements about amelioration strategies.

The model was incorporated into the STARS II computer system to produce psychological reports for five cases. These reports were copied by typewriter to conceal the computer-developed report identity. Also, five cases were randomly selected from a file of psychological reports prepared by school psychologists. Both sets of reports were evaluated by having each of 62 school administrators, employed in different school districts, rate one of the five psychological reports prepared by using the systems model or one of the five reports prepared by school psychologists. A set of criteria such as clarity of the report, usefulness of the report, etc., was developed from the literature for rating the psychological reports.

The 62 administrator ratings of the psychological reports, 32 prepared by the model and 30 prepared by psychologists, were compared and tested for differences by the *t*-test. The results indicated that the reports prepared by the systems model were rated significantly higher on each of the 12 evaluative criteria.

While the respondents indicated a higher quality was present for the systems prepared reports than psychologist prepared reports, a need was indicated for similar systems models for such tests as the Wide Range Achievement Test, Peabody Individual Achievement Test, and

the Bender Gestalt Visual-Motor Integration Test. A recommendation was made for further research and model development to meet this need.

CHAPTER ONE
INTRODUCTION

Administration in a public school district is responsible for the provision of various, and sometimes complex services to children. The specific function of administration, according to Griffiths (1955), is to "develop and regulate the decision-making process in the most effective manner possible" (p. 73). This is done through the integration and "coordination of human and material resources toward objective accomplishment" (Kast & Rosenzweig, 1970, p. 5). The administrator of psychological services in the public school district is concerned with using personnel and other resources to provide psychological evaluations and related services in an economical and expeditious manner.

During the early 1970s a growing awareness of the plight of handicapped children brought pressure on the psychological service departments of public school districts for the efficient delivery of services. The awareness, and concomitant concern, led to Public Law 94-142, The Education for All Handicapped Children Act of 1975. Following the enactment of P.L. 94-142 there has been an increased demand for the services of school psychologists. Referrals for psychological testing, or individual intelligence tests, and psychoeducational evaluations, which include academic achievement and psychological process assessment in addition to intellectual assessment, have rapidly increased since the early 1970s, causing concern for both the

department of psychological services and the department of exceptional student programs (Lamb, Note 1).

In requiring that all handicapped students be provided with a free appropriate public education, P.L. 94-142 had a direct impact on the exceptional student programs of the school districts in Florida and all other states and an equally great impact on the school psychological services department in school districts. Provision of services in exceptional student programs requires appropriate psychological evaluation to determine eligibility for such special education services.

In the 1977-78 school year, 3,554,554 exceptional students were provided special education services across the nation; the following year, 3,709,716 were provided special education services (Education of the Handicapped, 1979, p. 1). This was a 4% increase in one year of students across the nation who were evaluated and determined to be eligible for special education services by exceptional student program personnel. While not all of these students required the services of a school psychologist, many did. Many others were evaluated and determined not to be eligible for such services. A primary function of school psychologists has been and will continue to be the evaluation of students to determine their eligibility for exceptional student programs (Leton, 1964; Gardon & Bennett, 1974, Keogh, Kukic, Becker, McLoughlin & Kukic, 1976; Hayes & Clair, 1978).

Similar trends were noted in Florida. The total number of exceptional students served in special education programs was 165,594 in 1977-78, and 167,976 the following year. This was a 2% increase in

one year of students in the state of Florida who were provided with special education services. However, there was a 57% increase in special education enrollments during the decade of the 1970s. These figures showed a definite increase in the number of students being placed into exceptional student programs and imply a noticeable increase in the number of students being evaluated by the school psychologists within the state of Florida.

The escalating demands for psychological services within school districts have generated two related time pressures. The first was the time lapse between initial referral of a student for evaluation and subsequent placement of the student in an appropriate program. Two court cases have addressed the rights of children in regard to this time lapse, Lebanks v. Speers (1973) and Mattie T. v. The State of Mississippi (1979). In Lebanks, the judge ruled that 60 days was sufficient time for the evaluation to be completed.

The second time pressure, which is contained within the first, is the time between the student psychological evaluation and distribution of psychological reports to the school and to exceptional student program personnel. Obviously, any extention of this time lapse would be expected to influence the total time between initial referral and subsequent placement in an appropriate program.

A third time pressure experienced by school psychologists involves the demand for an increased variety of services separate from the demand for increased numbers of evaluations. In addition to the evaluation of potential exceptional children, school psychologists

are expected to provide consulting services, frequently through participation in individual educational plan (IEP) meetings. Both Florida State Board of Education Administrative Rules (SBEAR) and P.L. 94-142 Regulations address this expectation.

Participants in the IEP development meeting include parents of the exceptional student, the student's teacher, a representative of the school district and, in accordance with Florida State Board of Education Administrative Rule 6A6.331(2)(f), sometimes other personnel such as the following:

> In addition, for an exceptional student who has been evaluated for the first time, a member of the evaluation team, or some other person who is knowledgeable about the evaluation procedures used with the student and is familiar with the results of the evaluation.

Finally, another major time pressure faced by school psychologists is the demand for counseling, or psychotherapy. Bardon and Bennett (1974) found that long-term therapy was seldom the function of the school psychologist because their time was limited (p. 12). However, they indicated that short-term crisis intervention and counseling were expected. The school psychologist should also function as the school's liaison with supportive community resources.

These many demands for the school psychologist's limited time force the administrator of school psychological services to seek a system for effective and efficient delivery of the various services. Since the majority of the school psychologists' time is spent in student evaluation services, time-saving improvements need to be made in this area.

The most frequently used instruments for providing evaluation services was found to be the Wechsler intelligence scales (Keogh et al , 1975; Shapiro, 1974). There ere three tests in the Wechsler series The Wechsler Intelligence Scale for Children--Revised (WISC-R) is the most commonly used within the school setting since it covers en age range from 6 years end 0 months through 16 years end 11 months (Wechsler, 1974, p. 7)

A system that would help provide more effective and efficient use of this testing program would result in improvement of school psychological services. The purpose of this research was to provide the basis for such a system.

Problems

Problems of the Study

The problems of the study were

1. To develop e systems model for enelyzing the results of the WISC-R end producing e psychological report of the student's intellectual functioning by using the following procedures:
   (a) to derive from a review of the relevent literature e comprehensive set of appropriate analytical statements for the various subtests of the WISC-R and
   (b) to clarify the reletionships between the analytical statements end the level of scores the student can receive on the subtests of the WISC-R by establishing e gradiation of the enalytical statements matching the verious possible scores

2. To evaluate the systems model by having selected administrators of exceptional student programs and administrators of school psychological services rate a psychological report produced by using the systems model or a psychological report randomly selected from a file containing psychological reports prepared by school psychologists.

Delimitations and Limitations

The following confinements were observed in the study:

1. The WISC-R, being the individual intelligence test most frequently administered by school psychologists, was selected for this study. No other test instruments were involved.
2. The study was limited to practices of psychological services departments of school systems.
3. The study was confined to those school systems in the state of Florida.

The developed systems model may have limited application to other tests administered by school psychologists. Many of the rules may be transferable but since each test measures different aspects of intellectual functioning, or measures the same aspects differently, adaptation of the systems model would be necessary if any test other than the WISC-R is involved.

Justifications for the Study

The study was intended to meet a pressing need for systematizing one aspect of the services provided by school psychologists in the evaluation of exceptional students. The aspect to be systematized was the analysis, or interpretation, of the WISC-R. Meehl (1956) pointed to the need for a system, which he called the "cookbook method" (p. 264), for analyzing psychological tests. While he was investigating the use of the cookbook approach with the Minnesota Multiphasic Personality Inventory (MMPI), he concluded that the system would have pragmatic implications for most psychological instruments by stating that "the clinical interpreter is a costly middleman who might better be eliminated" (p. 271).

Meehl (1956) concluded that an expenditure of time in constructing a system for analyzing frequently used psychological test instruments was more efficient than an expenditure of time individually analyzing each psychological test administered. This type of time expenditure on the WISC-R would result in improved efficiency in the school psychological services. The eventual result would be more expeditious reporting of WISC-R results on all tests administered. Such a time-saving procedure would be a valuable contribution to both the school psychological services department and the exceptional student programs. It would be an even greater service to the exceptional students who must wait for long periods of time for special education services because of the heavy demand that has been placed on the school psychological services across the state and nation.

Definition of Terms

Achievement tests Those tests that assess the academic progress of students. Both individually administered and group achievement tests will be discussed using the general term (English & English, 1958, p. 6).

Analysis of psychological tests The interpretation and written report following the administration of an individual intelligence, personality, or other type of psychological test.

Evaluation A formalized process which provides information concerning a system's operation compared to the system's desired operation.

Exceptional student programs The special education programs provided to meet the unique needs of students who have been or can be identified as exceptional students.

Exceptional students Are those who are identifiable by specific standards. Florida Statute 228.041 (1977) gives the following definition:

> (19) EXCEPTIONAL STUDENTS.-- The term "exceptional student' means any child or youth who has been certified by a specialist qualified under regulations of the state board to examine students who may be unsuitable for enrollment in a regular class of the public schools or is unable to be adequately educated in the public schools without the provision of special classes, instruction, facilities, or related services, or a combination thereof. The term "exceptional student" includes the following: the mentally retarded, the speech-impaired, the deaf and hard of hearing, the blind and partially sighted, the crippled and other health-impaired, the emotionally disturbed and socially maladjusted, those with specific learning disabilities, and the gifted.

Intelligence quotient (IQ): A "shorthand designation for intelligence" (Anastasi, 1968, p. 210). The IQ was originally derived by dividing the mental age by the chronological age and multiplying by 100 (Anastasi, p. 46).

Intelligence tests: A series of tasks that yield an IQ score (English & English, 1958, p. 269).

Inter-subtest scatter: The variability of an individual's ability as reflected in varying scores on the subtests of a test. The "scatter is the pattern or configuration formed by the distribution of the weighted subtest scores of an intelligence test" (Rapaport, Gill & Schafer, 1968, p. 75).

Intra-subtest scatter: The variability of an individual's scores within each subtest. High intra-subtest scatter would result when many errors occurred at lower levels while more difficult items are achieved.

Open system: A system in which there is exchange of materials, energies, or information with its environment.

Psychoeducational evaluation: Pertains to the psychological aspects of the learning process in general (English & English, 1958, p. 418). The term means a test battery that includes educational assessment as well as intellectual assessment.

Psychological evaluation: A measure of psychological functioning. It consists of a set of standardized tasks presented to an individual to elicit a representative sample of his or her ability to cope with a given kind of environmental demand (English & English, p. 547).

Psychological test: A psychological evaluation. The terms are interchangeable.

Psychological report: An account of the testing session which includes data useful to the referant. The report includes observations, analysis of test results, and recommendations based on the outcome (Rucker, 1967).

Psychologists: A person in the field of psychology. A psychologist has made an extensive study of the field of psychology under professional guidance (English & English, 1958, p. 415).

Referral: The act of sending an individual to someone for help. Referrals are defined as "the process whereby a parent, or guardian, school personnel or appropriate public agencies may request assessment of the abilities of a student" [State Board of Education Rules 6A-6.341(2)(c)].

Scatter: The same as inter-subtest scatter. The terms are used interchangeably.

School psychologist: A person with extensive training in psychology who works primarily in the school setting. Much of the school psychologist's time is spent in diagnosing academic and behavioral problems of individual children and interpreting the findings to parents and teachers (Dunn, 1965).

Stanford-Binet: The first intelligence test produced in the United States. It was published in 1916, revised three times and renormed again in 1972 (Terman & Merrill, 1973). It uses age standards to measure general intelligence which yields both mental age and IQ for individuals tested.

Systems: Parts working together as a whole. A system is an "organized, unitary whole composed of two or more interdependent parts, components, or subsystems and delineated by identifiable boundaries from its environmental suprasystem" (Kast & Rosenzweig, 1974, p. 101).

Systems model: A model developed in a systematic way. The systems model for analyzing the WISC-R was developed to be a system made up of a number of subsystems working together.

Wechsler Intelligence Scale for Children (WISC): An individually administered intelligence test. The WISC uses a derived IQ without using the mental age concept (Wechsler, 1974). Because of its usefulness in specifying educational implications it is frequently the preferred test of school psychologists (Keogh et al., 1975).

Wechsler Intelligence Scale for Children--Revised (WISC-R): The 1974 revision of the WISC.

Procedures

The study was conducted in three phases. The first phase, the development of the systems model, included the review of relevant literature and establishing a set of analytical statements for analyzing the WISC-R based upon the review. The second phase was to have the systems model evaluated by administrators of school psychological services and administrators of exceptional student programs. The final phase involved statistical analysis of the evaluation phase and deriving conclusions from the results.

Development of the Systems Model

The systems model for analyzing the results of a WISC-R evaluation was developed based upon a review of the relevant literature The review of relevant literature is presented in Chapter Two Further explanation of the systems model development is presented in Chapter Three and the systems model is presented in Appendix D.

The product of the systems model was a psychological report which included three sections observations, test results, and recommendations. The test results section provided a display of the individual subtest scaled scores and intepretation information about the student's performance on the WISC-R in the form of analytical statements derived from the review of the literature and structured in a series of graded statements corresponding to the range of possible scaled scores the student could have achieved on the various subtests.

The major variables of the systems model included the different subtests of the WISC-R, age of the student tested, and the possible scaled scores. Three branches were provided for other variables including quality responses, intra-subtest scatter, and relativity of the student's strengths or weaknesses. A gradation of analytical statements corresponding to the range of possible scaled scores within each subtest. At each age level, were prepared as the main elements of the system. Modifications of the analytical statements were prepared for each of the branches.

There are 12 subtests of the WISC-R, each of which provides an assessment of the student's ability. Usually, 10 of the subtests

are administered since the author of the test considered 10 to be mandatory (Wechsler, 1974, p. 8). It is possible to administer more or less than the standard 10 subtests. The Digit Span and Coding subtests are included as supplementary tests but can be used instead of one or two of the standard subtests (p. 8). Analytical statements were prepared for all 12 subtests.

The WISC-R has an age range of 6 years and 0 months to 16 years and 11 months. The table of norms reports three-month intervals (pp. 117-150). Although the very small intervals are essential for raw score to scaled score conversion, much larger intervals are appropriate for analytical statements corresponding to the scaled scores. It makes a difference when comparing two students if they are three, or six, or nine months different in age when looking at the number of items achieved within a subtest. This difference is reflected in the table of norms. However, unless the analytical statements can, and should, be written to correspond to each item rather than a range of items much larger intervals are not only acceptable but preferable. For this reason, two-year age ranges were used in developing the systems model for analyzing the WISC-R results. This combination resulted in five groups with the fifth group including three instead of two years.

The WISC-R has three subtests that provide for discrimination of quality answers from acceptable answers. On the Similarities, Comprehension, and Vocabulary subtests, answers can be scored as 0, 1, or 2. The systems model included a branching subsystem to allow for the appropriate analytical statements to recognize this possible

difference in otherwise equal raw scores. This branching subsystem could be bypassed if the school psychologist using the system so desired.

Inter-subtest scatter refers to the varying scaled scores on the subtests of the WISC-R. The higher scaled scores represent strengths for the student. The strengths can be real, as compared to the scores received by other students of the same age, or relative, as compared to the other scaled scores the student receives. A student, therefore, could have a relative strength that was below average compared to other students if the student's average scaled score was deficient or extremely deficient.

The same interpretation would apply to weaknesses since both real weaknesses and relative weaknesses are possible. A branching subsystem was developed to allow for modification of the analytical statements for real strengths and weaknesses and relative strengths and weaknesses.

Intra-subtest scatter refers to the possible scatter of correct responses within each subtest. Intra-subtest scatter is usually minimal with normal students, and slightly less so with most retarded students. It is a more common characteristic of students suspected of having minimal brain damage (Johnson & Myklebust, 1967, p. 5). A subsystem, or branch, was provided in the systems model to modify the analytical statements when substantial intra-subtest scatter was evident in the test results.

The main variable from which the subsystems branch was a gradation of analytical statements corresponding to the range of

possible scaled scores. The scaled scores are grouped to approximate the normal distribution in the following way: scaled scores of 3 and below are approximately at or below -3 standard deviations (SD), scaled scores 4 and 5 are approximately between -3 SD and -2 SD, scaled scores 6 to 8 are approximately between -2 SD and -1 SD, scaled scores 9 to 11 are approximately between -1 SD and +1 SD, scaled scores 12 to 15 are approximately +1 SD to +2 SD, and scaled scores 16 to 19 are above +2 SD. The analytical statements are grouped in 6 gradations to correspond to these levels. A further distinction for those scaled scores at or above the +3 SD level was not needed since there is no educational distinction between gifted students and very gifted students, whereas, there is an educational distinction between students classified as educable mentally retarded and trainable mentally retarded. That distinction considers the standard deviations on the intelligence test as one of the criteria for determining classification of a student. Florida State Board of Education Administrative Rule 6S-6.3011(1)(b) gave the intellectual functioning range for trainable classification to be between 3 and 5 standard deviations below the mean as a partial criterion.

Evaluation of the Systems Model

The second phase of the study involved the evaluation of the systems model. Administrators of school psychological services and administrators of exceptional student programs for every school district in Florida were asked to participate in the evaluation phase of the study.

Letters were sent to these administrators asking them to participate in the study by rating (on an evaluation form provided) a psychological report of a WISC-R sent to them. The psychological reports mailed to the administrators of school psychological services and administrators of exceptional student programs were randomly selected copies from among WISC-R psychological reports produced by school psychologists and WISC-R psychological reports produced by using the systems model. They were also asked to send a randomly selected WISC-R psychological report from their own files for comparison purposes.

Statistical Analysis of the Results

The final phase of the study was to statistically analyze the evaluations and present conclusions based on the results. A series of *t* tests was used to compare ratings given to the psychological reports that had been prepared by school psychologists and the ratings of the psychological reports which had been prepared by using the systems model. Statistical comparisons were made for each evaluative statement from the evaluation instrument.

CHAPTER TWO
REVIEW OF THE LITERATURE

In the review of the literature emphasis was placed on the core concepts under investigation which were exceptional student programs, psychological services in the schools, analysis of psychological evaluation, interpretation of the Wechsler subtests, and systems developed for analyzing psychological tests. Because the body of literature in these areas is extensive the review was limited to published books and journal articles available in two university libraries and material available from the Florida Department of Education.

Exceptional Student Programs

The increased demand for services for handicapped students resulting from Public Law 94-142 has impacted on both the exceptional student programs and the school psychological services departments because of their dynamic interrelationship. Exceptional student programs in Florida include many categories and a wide variety of unique services for students. According to the provisions of Florida Statute 230.23(4)(m) "No student shall be given special instruction or services as an exceptional student until after he has been properly evaluated, classified, and placed in the manner prescribed by the rules of the state board." The administrator of exceptional student programs is responsible for determining the eligibility of students to receive the special educational services provided.

Administrator's Role

In accordance with Florida State Board of Education Administrative Rule 6A-6 331 the district board has the responsibility to provide for administration of exceptional programs as follows

> (4) Each district shall designate a staff member as a program administrator of special programs for exceptional students who shall be responsible for the following:
> (a) coordinating all district programs for exceptional students,
> (b) review the recommendations of the evaluation specialists and the staffing committee,
> (c) determining student eligibility for special programs defined in these rules and in the criteria pursuant to rule 6A-6 341-FAC,
> (d) assuring that parents have been appropriately informed of the student's recommended educational placement and of their due process rights;
> (e) informing, in writing, the appropriate school principal of the student's eligibility for a special program,
> (f) carrying out educational planning, articulation and reassignment of students.

Since the administrators of exceptional student programs have been charged with the responsibility for reviewing the evaluation reports, or psychological reports, to determine the student's eligibility, they have a professional interest in a system for organizing such a report. A systematic organization of the psychological report would expedite the decision-making process.

Klopfer (1960) stressed the purpose of a psychological report was mainly for the benefit of the client, or student, by stating that if "the purpose of helping the client cannot be served by the psychological report, its basic utility is doubtful" (p. 6). Therefore, the purpose within the school setting is to provide decision-making information concerning the most appropriate educational placement for the student evaluated.

Identification

Each school district must provide procedures for identifying students who are eligible for exceptional student program services by defining 'operationally the criteria for the eligible student group consistent with state board rules' [SBEAR 6A-6.341(2)(a)] The identification procedures as prescribed by Florida State Board of Education Administrative Rules and P.L. 94-142 were elaborate Both provided for evaluation by qualified evaluation specialists, using valid test and evaluation materials, in the child's native language; triennially; and, included provisions for independent evaluation at the request of the parent

In addition to the evaluation phase of identification, many other aspects were defined, including procedures for referral, screening, placement, and parent participation. The evaluation of a student varies according to the needs of the student For example, a student exhibiting a speech distortion would not necessarily require a psychological evaluation while most children exhibiting learning difficulties require individual intellectual evaluation by a school psychologist For identification as mentally retarded, SBEAR 6A-6.3011(3)(d) required the assessment of intellectual functioning by a certified school psychologist. Similarly, an individual assessment of intellectual functioning was required for emotionally handicapped, learning disabled, and occasionally for physically handicapped students

Burgdorf and Burgdorf (1975) reviewed the litigation dealing with the legal rights of handicapped persons They found that 'the

state and its categorization process define who is handicapped" (p. 859) and that a person who has not been classified may be evaluated to determine their inclusion into such a category in the following way,

> if a person can be shown to meet the criteria for one of the categories of recognized handicapping conditions, then that individual is a "handicapped person," even if the state has not had occasion to so identify that person (p. 861)

The national escalation of identification of handicapped, or exceptional, students was expected and planned to meet the needs of children previously denied a public education. Weintraub and Abeson (1972) estimated that there were approximately 2,800,000 handicapped children in the United States receiving special education services during the 1971 school year. Since 3,709,716 school children were provided special education services during the 1978-79 school year, this indicated a gain of close to 1,000,000 children receiving the needed services in less than a decade.

Keogh and his colleagues (1975) indicated that school psychologists exhibited a preference for the Wechsler scales for intellectual evaluations. Littell (1960) found that early reviews of the WISC varied from the prediction of wide usage to critical rejection. Some of the strong points he found were

> It is easy to administer, interesting to children, gives both a Verbal and Performance IQ, provides IQ's directly comparable for various ages, appears to have potential clinical use, and has an easily used manual. (p. 133)

Because of these advantages the WISC and later the WISC-R have provided information that facilitated educational planning.

Individual Educational Plans

Both P. L. 94-142 and Florida state board rules require that individual educational plans, commonly known as IEPs, be provided for all exceptional students. Stetler (1979) found that the three greatest concerns generated by P.L. 94-142 were mainstreaming, individual educational plans, and parent involvement (p. 1). Mainstreaming, he explained, was a coined term to explain the concept contained in P. L. 94-142 requiring that exceptional students be provided educational services in the least restrictive environment.

> The key to the least restrictive alternative is the individualized educational plan. The individualized educational program requires that a written educational program be provided for each handicapped child who is receiving or will receive special education, regardless of what institution or agency provides or will provide special education to the child. The plan must include statements of the child's performance levels, annual goals, short-term instructional objectives, and specific educational services needed. (Stetler, 1979, p. 1)

The psychological report should facilitate the writing of an individual educational plan by providing the essential information on the child's performance levels in academic areas and intellectual development. Additionally, the psychological report should recommend the appropriate techniques to ameliorate the cognitive and affective problems, according to Hayes and Clair (1978).

Psychological Services in the Schools

The roles of the school psychologist have been found to vary as a result of many factors. Gottsengen (1960) stated that factors such as the philosophy of a school or community affected the role

causing it to expand or contract accordingly. The major functions, as he outlined them, included helping the individual child, conferring with the teacher, helping the parent, acting as a consultant, being a community linker, and conducting research in the schools (pp. 1-17). These roles were very similar to the standards established by the Florida Department of Education for psychological services in the schools. Seven roles listed in the Accreditation Standards in 1971 were resource consultant, evaluation services, follow-up services, community and school liaison, team consultant, coordination and leadership, and prevention (Florida Department of Education, 1971, pp. 19-20).

Other writers, while not limiting the role of the school psychologist to a single function, nevertheless stressed the importance of the primary function. The primary function, as seen by administrators and teachers alike, was the assessment and diagnosis of educational and adjustment problems of school children (Halpern, 1960, Hayes & Clair, 1978, Keogh et al., 1975, White & Harris, 1961). The writers pointed to the value of the psychological evaluation as an educational tool. Halpern (1960) summed up the educational capabilities of the psychological evaluation with the following statement:

> In general, the individual psychological examination can be described as one of the most potent tools available to the school psychologist. With its aid he can gain a firm, deep, and objective understanding of the child and his difficulties. Test findings also give him a measure of the child's intellectual and emotional resources, the nature and extent of his strengths and weaknesses. Knowing this, he can make determinations about the child, his accessibility to treatment, and the kind of treatment that will be of most benefit to him. (p. 112)

In a survey conducted among school psychologists in California it was found that so much of the school psychologist's time was spent in the initial evaluation of students for possible placement in exceptional student programs and in the reevaluation of students in such programs that it was "obvious that there is limited time for other activities" (Keogh et al., 1975, p. 144). Keogh and his colleagues found that one of the Wechsler scales was the instrument most frequently used for individual intellectual evaluation by the school psychologists who participated in the survey.

There were three levels of the tests developed by David Wechsler. The original Wechsler-Bellevue later became the Wechsler Adult Intelligence Scale, or the WAIS (Wechsler, 1955, p. iii). The Wechsler Intelligence scale for Children, or the WISC, was updated to become the Wechsler Intelligence Scale for Children--Revised, or the WISC-R, in 1974. The WISC was changed from an age range of 5 through 15 years to 6 through 16 years for the WISC-R (Wechsler, 1974, p. 10). The Wechsler Preschool and Primary Scale of Intelligence, or the WPPSI, was provided for younger children (Wechsler, 1967).

After revision, the WAIS contained 11 subtests while the WISC-R contained 12 subtests. The subtests of the WISC-R were called Information, Similarities, Arithmetic, Vocabulary, Comprehension, Digit Span, Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, and Mazes. Ten of the WAIS subtests used the same names as those for the WISC-R. There was no Mazes subtest on the WAIS and the Coding subtest was called Digit Symbol on the WAIS. The items on the

different levels (WAIS, WISC-R, and many of the WPPSI subtests) were of similar nature but were age appropriate. The Digit Span on both the WAIS and the WISC-R and the Mazes on the WISC-R were recommended to be used as alternates or supplementary tests. Therefore, IQ subtests were routinely administered at each level (Anastasi, 1968, pp. 271-294).

Analysis of Psychological Evaluation

Holtzman (1950) stated that there were three distinct phases that a psychologist went through in analyzing a psychological test. The first phase involved the collection of information, through observation and testing. The second phase was the preparation and translation of the information for analysis. The final phase was the actual analysis, or interpretation, of the accumulated information. The clinician, according to Holtzman, spent a major portion of his or her time and energy "focusing upon one of these three phases at a time" (p. 120).

The first phase for the school psychologist utilizing the WISC-R with a student involves direct interaction between the two. The verbal portion of the test is presented orally with the school psychologist recording the student's responses according to the established procedures provided in the manual (Wechsler, 1974). The procedures include specific directions for discontinuing most subtests after a specified number of consecutive failures and rules for timing the arithmetic subtest and all of the performance subtests. Precise scoring rules with numerous examples of possible responses were provided in the manual (pp. 154-187).

The second phase, involving translation of information for analysis, is accomplished by converting raw scores to scaled scores by using the conversion tables provided in the manual (pp. 117-152). The conversion tables were provided in three-month intervals so that each child is compared to a narrowly defined peer group, chronologically.

The third phase, that of analyzing the information, is the critical phase if appropriate educational decisions are to be presented in the psychological report. Holzberg, Alessi, and Wexler (1951) found this to be so in their research. They stressed the need for the report to meet the specific needs of the referent, the person making the referral, in the specific situation. The report should supply information needed to allow the referent to make appropriate decisions in behalf of the client. They also suggested that the report be supplemented by the psychologist's participation in the conference concerning the student. Klopfer (1960) also stated that the report should be prepared mainly for the primary reader, the referent who requested the evaluation and it should contain immediate and long-range recommendations addressing the purpose for which the referent intended (pp. 1-4).

Klopfer stressed the importance of organizing the psychological report around the client, or child, rather than the test administered to evaluate intellectual functioning (p. 20). He pointed to the organization of the psychological report as crucially important in communicating to the referent information that will allow appropriate

decisions to be made concerning the individual evaluated. The communication of results is the primary purpose for psychological evaluations. In the introduction of The Psychological Report: Use and Communication of Psychological Findings, Klopfer made the following observation:

> This volume is based upon the belief that the findings of psychological assessment procedures are meaningful, basically consistent and communicable to others. It is assumed that the hypotheses culled from tests, however speculative, can be evaluated in terms of logical and empirical demonstrability. (p. ix)

A psychological report is most helpful to the referent when it is child-oriented and reflects the kinds of behaviors observed in the child, according to Palmer (1970). He gave the following example to help readers recognize a child-oriented report:

> The child-oriented report is replete with such phrases as "Johnny understands," "Johnny feels," "Johnny fantasies," "Johnny avoids." The use of the child's name or the personal pronoun is thus the hallmark of the child-oriented report. (p. 338)

Whereas Halpern (1960) and Buktenica (1964) found that communicating findings was the school psychologist's most difficult task, Palmer (1970) stated that for a beginning clinician (school psychologist) the most difficult task was probably that of "recognizing and interpreting the evidence" (p. 207). Therefore, analyzing the meaning of different test behaviors was the primary concern. Actually the interpretations of findings should not be separated from the communication of the results unless the person making the interpretations is to be the primary person working with the individual evaluated. Interpretation is, of course, a prerequisite of communication of results.

Palmer's methods for analyzing test data were well organized into a systems approach but centered on the "overall functioning of the child's ego" (p. 207) rather than reviewing the child's intellectual functioning, however. Other writers, beginning with Rapaport, Gill and Shafer, in their classical book Diagnostic Psychological Testing, originally published in 1945, analyzed intelligence tests both in terms of ego development and intellectual functioning (Anastasi, 1968, p. 296).

The results of the WISC-R, or other psychological evaluation, should be analyzed and communicated to the school personnel in a written report. Parents are entitled to review the report according to Section 121a502 of P.L. 94-142. Halpern (1960) found that communicating findings was sometimes the "most difficult and important aspect of the psychologist's work" (p. 106). She explained how the school psychologist's obligations to the individual student, the teacher, the parents, and the school might require different levels of interpretation of the results.

The psychological report, or the written analysis of findings, has been the subject of much inquiry. Many writers stressed the need for clear, unambiguous psychological reports (Suktenica, 1964, Klopfer, 1960, Mussman, 1964, Rucker, 1967, White & Harris, 1961). It was better, according to Suktenica (1964), to leave information out of a psychological report if the psychological concept cannot be interpreted in practical, usable language that the teacher or parent could understand. What he was stressing was the vital importance of being understood. Rucker (1967) made the same point with the following statement:

> In order for a school psychologist's evaluation to be useful to a teacher, his findings and recommendations must be expressed clearly. If the report is ambiguous, the psychologist and the teacher have wasted their time, and an adequate educational plan will not be developed for the child. (p. 146)

Organization of the Psychological Report

Many writers stressed that the psychological report should be expressed clearly and be free from technical jargon (Buktenica, 1964; Klopfer, 1960; Palmer, 1970; Rucker, 1967). Klopfer (1960) stated that a set of rules should be followed in organizing the written report. He gave examples of three methods for organizing the report: the theory-oriented report, the test-oriented report, and the personality-area-oriented report. The personality-area-oriented report described by Klopfer was similar in organization to the child-oriented approach recommended by Palmer (1970). Klopfer organized the examples, provided in his book, into sections labeled "Behavior during Examination" or "General Observation," followed by test interpretation, or analysis (pp. 20-25).

A booklet published by the Florida Association of School Psychologists (1979) gave the following recommendation:

> A psychological report should contain at least the following information: Referral and background information, behavioral observations, test results and interpretations, conclusions, and recommendations. (p. 18)

Such organization was intended to help the reader locate the pertinent information quickly. Either the interpretations or conclusions should clearly specify the student's strengths and weaknesses since that information was found to be essential for appropriate educational

planning (Allison et al , 1968, p 23, Florida Association of School Psychologists, 1979, p. 16; White & Harris, 1961, p. 5).

Use of the Psychological Report in the Individual Educational Plan

The psychological report should have a direct impact on the individual educational plan (IEP) for students found to be eligible for exceptional student programs. According to the Florida Association of School Psychologists (1979):

> The primary aim of a psychological evaluation by a school psychologist is the assessment of a child's psychoeducational needs. Such assessment is aimed toward the identification of the child's strengths and weaknesses. Based upon the resultant knowledge of these strengths and weaknesses, meaningful recommendations can be made. (p 16)

Meaningful recommendations are needed in developing the IEP for each exceptional student. The IEP should be developed using the information provided in the psychological report for the student's current performance level and the recommendations should be incorporated into the objectives to be achieved.

The utility of a psychological report for IEP development is dependent on appropriate recommendations being provided on the psychological report or the teacher's ability to provide appropriate instructional strategies and activities to match the provided interpretations of the student's needs.

Interpretation of the Wechsler Subtests

In developing a systems model for analyzing the results of the WISC-R, one of the supporting goals was to derive from a review of the

relevant literature a comprehensive set of appropriate analytical statements for the various subtests. The systems model, which is presented in Appendix D, was developed from the interpretations reviewed in this section. Six levels were provided for each subtest, from the severely deficient level, corresponding to scaled scores 1 through 3, to a superior level, corresponding to scaled scores 16 and up.

Various writers have provided guidelines for interpretation of the Wechsler scales (Allison, Blatt & Zimet, 1968, Maloney & Ward, 1976, Rapaport et al., 1968, Shapiro, 1974). There was general agreement among these writers concerning what the various subtests measured. The Information subtest was viewed as measuring the "wealth of available information" (Allison et al., p. 24) while avoiding "technical, esoteric, or specific education-related content" (Maloney & Ward, p. 388). Maloney and Ward assumed that there "must be a relationship between the breadth of information and intelligence" (p. 388). Based on these findings, the systems model was developed to provide graded analytical statements indicating a severely deficient level of general information to a superior fund of knowledge.

The Similarities subtest measures associative thinking involving concept formation on three levels: concrete, functional, and abstract (Allison et al., p. 26; Rapaport et al., p. 98). Maloney and Ward included a fourth level below the three given. At the lowest level the individual showed no appreciation of similarities (p. 395). Concept formation, or conceptual development, was used as the primary terminology

for the analytical statements of the systems model for the Similarities subtest. Again the statements ranged from the severe deficiency level to the superior level to correspond to the range of possible scaled scores. The distinction between concrete and abstract concepts was made by Wechsler (1974, p. 155) by the scoring criteria. The systems model included a quality response branch to help reflect this distinction.

Arithmetic was viewed as measuring both computational skills and the "ability to concentrate on the problem, memory, and a logical fluid, problem-solving ability" (Maloney & Ward, p. 393). On the WISC-R the tasks on the Arithmetic subtest range from counting to solving a multi-step discount problem which the individual reads from a card. The systems model made use of the concept of problem-solving ability in the analytical statements and reflected the actual skills achieved or not achieved by linking the statements to the scaled scores. For example, the scaled scores of 1 through 3 for a student of 6 years and 0 months through 7 years and 11 months indicated that the student did not demonstrate the ability to count accurately (since it corresponded to a raw score of 0), while scaled scores of 4 and 5 correspond to raw scores of 1 to 3 points. Because the first three questions involve counting, the appropriate analytical statement for the lowest level reflected the lack of demonstrating counting skills.

Maloney and Ward found that the Comprehension subtest measured 'the ability to make practical judgment in everyday life' (p. 392). Others assumed that Comprehension measured social conventionality and

social judgment (Allison et al , p 25; Rapaport et al., p 92) Practical reasoning ability and social judgments were the primary concepts used for developing the analytical statements for the Comprehension subtest in the systems model

Vocabulary was viewed by most as the best general estimate of intelligence (Allison et al., p. 23, Maloney & Ward, p. 398, Rapaport et al., p. 82) and reflected the extent of the person's awareness of the meaning of words. Allison and his colleagues stated that the vocabulary level was "contingent both on innate ability and on an enriched early life experience' (p 24) However, Maloney and Ward found that it was highly correlated with educational level (p. 398). The interpretation that the Vocabulary subtest measures the individual's understanding of the meaning of words was used in developing the systems model.

Digit Span is a subtest that can be used as a substitution for another verbal subtest or as a supplementary test. It was determined to be a measure of auditory memory and attention span by Maloney and Ward who found that, "at lower intellectual levels memory span is an extremely effective test of general intelligence" (p. 397). Rapaport et al. provided two types of interpretations for the Digit Span subtest. The attention, or auditory memory, interpretation was educational in nature while the anxiety interpretation was more psychiatric in nature (p. 115) Allison et al interpreted Digit Span using psychiatric terminology with the explanation that low Digit Span scores (compared to Vocabulary scores or Full Scale IQ) indicated anxiety and

high Digit Span scores are "frequently found in detached, schizoid people" (p 27) The systems model was developed using the auditory memory concept for analyzing the Digit Span subtest.

Consensus was also present among the writers reviewed on the meaning of the performance subtests. Picture Completion was viewed as a measure of visual alertness and familiarity with common objects in the environment (Allison et al., p 30; Maloney & Ward, pp 401-402). This interpretation was used in developing the systems model.

Picture Arrangement, according to Maloney and Ward, "effectively measures a subject's ability to comprehend and 'size up' a total situation" (p 405) The ability to visualize a total situation and 'grasp the essential message of social interaction' (Allison et al , p. 29) allowed the individual "to anticipate the consequences of initial acts or situations, and hence is a reflection of his planning ability' (Rapaport et al , p 127) The systems model was developed using these interpretations for the Picture Arrangement subtest.

The Block Design subtest was viewed by Allison and his colleagues as a measure of visual-motor organization (p 31). Maloney and Ward elaborated on the interpretation by stating that the individual must accurately perceive, analyze and synthesize the design by utilizing 'nonverbal concept formation, capacity for sustained effort, and visual-motor coordination" (pp 402-403) They also identified an important observation to be made during the administration of the Block Design subtest.

> In addition to providing observations regarding specific facets of cognitive function, this task gives the examiner a unique opportunity to observe how the subject goes about problem-solving. On most verbal tasks and performance tasks like Picture Completion, we typically see only the result of cognition. On Block Design we are able, in a sense, to watch the process. (p. 403)

Visual-motor coordination and the ability to perceive, analyze and synthesize were used as the main components of the analytical statements for Block Design in the systems model.

Object Assembly was yet another measure of visual-motor coordination according to Allison et al. Maloney and Ward noted that the Object Assembly, to a greater extent than the other measures of visual perception, involved sensory-motor feedback (p. 407). The visual perception and organization concept was used in developing the analytical statements for the Object Assembly subtest.

Coding on the WISC-R essentially measured the same psychological process as the Digit Symbol subtest on the WAIS. Maloney and Ward stated that this subtest "was originally borrowed from the Army Beta Test" (p. 400). Whereas Allison and his colleagues determined that the subtest "required relatively little learning, concept formation, anticipation, planning, or analytic-synthetic functioning" (pp. 31-32), Maloney and Ward determined that it involved a variety of cognitive functions as indicated in the following statement, 'For high performance a subject must have the ability to learn unfamiliar tasks, have quick visual memory, concentration, rote recall, and have the ability to work under pressure" (p. 401). The latter interpretations were included in the systems model.

Mazes is another supplementary test. The author recommended the use of Mazes in the place of Coding for children below the age of eight (Wechsler, 1974, p. 8). Although it is an infrequently used subtest it was included in the systems model.

Recommendations Based on Test Results

Compared to interpretation of test results, the amelioration, or treatment, of handicapping conditions has received relatively little attention (Strang, 1968, p. 87). Lerner (1971) recognized the lack of definitive evidence relating theory to methods (p. 87) but offered teaching strategies for remediating, or ameliorating, educational weaknesses. Her strategies were classified into five groups: sensory-motor and perceptual-motor development, perception and memory, language, cognitive skills, and maturational, psychological and social factors (pp. 106-250).

Many of the strategies provided by Lerner could be linked to appropriate treatment for weaknesses identified through evaluation with the WISC-R. For example, she provided 16 techniques to improve visual perception (pp. 133-134), 18 techniques to improve auditory perception (pp. 135-136), 7 techniques to improve auditory memory (pp. 138-139), and 4 techniques to improve visual memory (p. 139). Some of these techniques were included in the recommendations of the systems model.

Valett (1967) provided remediation techniques throughout his book The Remediation of Learning Disabilities and linked educational resources to the needed remediation. Educational materials catalogs,

especially those for special education link their products to children's needs. Valett included recommendations for matching, categorizing, verbal classifying, and associating for concept development (p. 48). These were included in the recommendation section of the systems model for weaknesses exhibited in Similarities, which measures conceptual development.

Systems Developed for Analyzing Psychological Tests

Systems have been developed since the 1950s for analyzing various psychological tests (Apter & Mesby, 1973; Brooks & Klienmuntz, 1974; Elwood, 1969; Holtzman, 1960; Klienmuntz, 1975; Meehl, 1956; Newell & Simon, 1964; Robinson, 1963). Systems were developed for the Minnesota Multiphasic Personality Inventory, commonly known as the MMPI (Meehl, 1956), and the Holtzman Inkblot Test (Holtzman, 1960), among others. No system for analyzing the 1974 WISC-R was found in the review of published literature.

Shapiro (1974) developed a computerized system for analyzing the WISC the same year that the WISC-R was published. His approach, however, emphasized the psychiatric aspects rather that the educational aspects of intellectual functioning and gave no recommendations for educational intervention. Because of his emphasis on terms such as organicity, neurosis, psychosis, and anxiety rather than cognitive aspects, the system Shapiro developed would be expected to have limited acceptance in an educational setting. It would have much greater usefulness in a clinical setting where psychotherapy is the primary intervention.

CHAPTER THREE
DEVELOPMENT OF THE SYSTEMS MODEL

Following review of the relevant literature a systems model was developed for analyzing the WISC-R and producing a psychological report of a student's intellectual functioning. Specifically, the interpretations of the WISC-R subtest scores supported in the literature was translated into a comprehensive set of analytical statements. The relationships between possible scores, combination of scores, and scatter among scores were identified and rules for linking scores and analytical statements were formulated. These analytical statements with the primary variables linking them to scaled scores are included in Appendix D.

It can be observed that the systems model provides for the formulation of a psychological report which contains three sections: observations, test results, and recommendations. Each of these sections will be explained in this chapter. Examples of psychological reports produced by using the systems model can be found in Appendix C. The major components of the systems model are the analytical statements presented in the test results section of the psychological report. The primary variables used in the development were the 12 subtests of the WISC-R, 5 age groupings to include the complete range of ages for which the test was intended, and 6 groupings of the scaled scores that are possible.

Observations

All psychological reports need to provide some background information concerning the reason(s) for the referral, the interaction between the evaluator and the individual being evaluated, and other aspects that might impinge on the interpretations of the results (Klopfer, 1960, pp. 1-4). Both Klopfer and Palmar (1970) stressed the importance of using the child's name in the report to make it more personal and appropriate. This aspect has been included in the development of the systems model.

Klopfer (1960) laid the foundation for systematizing psychological reports so that they would be clearly organized for the reader and so that pertinent information could be located quickly. The Florida Association of School Psychologists (1979) reinforced Klopfer's recommendations for organizing psychological reports clearly and logically.

The systems model combines the three major background information aspects into the observations section. These are reason for referral, interaction (or rapport) between the evaluator and the individual being evaluated, and unusual situations or behaviors. Five different statements about the reason for referral were prepared to provide for quick selection. Four statements concerning rapport between the evaluator and individual being evaluated were prepared. All of the possible unique background situations or behaviors could not be catalogued so allowances were made for additional information or modifications to be inserted in the observations section of the

psychological report. Although this option is available for the entire systems model, whether computer-based or using it manually, it is an important aspect of the observations section.

Test Results

The test results section of a psychological report is the most important section (Halpern, 1960, p. 112). Halpern pointed to the use of psychological evaluation as "one of the most potent tools' (p. 112) for educational intervention if the results are properly communicated. In the psychological reports produced by using the systems model the test results section has three subsections although they are not viewed as such to the typical reader. The first provides a visual display of the IQ scores received, Full Scale IQ, Verbal IQ, and Performance IQ, as well as the scaled scores of the individual subtests. The second provides general statements of intellectual functioning. The third uses the system of analytical statements for interpreting the student's strengths and weaknesses. This third section is the main component of the systems model because of the complexity that is present for the different combinations of possible results.

The primary variables in this subsection are the subtests of the WISC-R, age groupings, and groupings of scaled scores. Each will be explained in separate sections.

In addition to considering the impact of the primary variables on the appropriateness of the analytical statements, other minor variables also warranted consideration. Three branches were developed to handle the complexities of the WISC-R. The first was identified as

the relativity branch, the second was identified as the intra-subtest scatter branch, and the third was the quality response branch.

Subtests of the WISC-R

As mentioned earlier, there are 12 subtests of the WISC-R, 10 of which constitute a complete test since there is no method for prorating scores when more than 10 subtests are administered although less than 10 can be prorated to equate a complete test. The earlier version, the WISC, allowed for proration of more as well as less than 10 subtests (Wechsler, 1949, p 114)

The 10 subtests that constitute the standard battery are Information, Similarities, Arithmetic, Vocabulary, Comprehension, Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Coding. Mazes and Digit Span were also included in the systems model although they are used infrequently. The analytical statements provided for each of the subtests were developed based on the interpretations found in the review of the literature.

Age Groupings

The WISC-R was devised to provide intellectual assessment for children as young as age 6 years and 0 months to as old as 16 years through 11 months. The tables for converting raw scores to scaled score equivalents are provided in three-month intervals (Wechsler, 1974, pp 117-150). The three-month intervals for scoring the student's performance allow for comparison with others within a narrowly defined age range.

The systems model used age groupings of 2 years with the exception of the fifth group which included an additional year for convenience. Because the test itself covered an 11-year age range, it could not be evenly divided into 2-year age groups. The extra year was included in the last age grouping because age difference was determined to have less impact on appropriate analytical statements at the higher age range since development tends to slow down after the early childhood years (Lefrançois, 1980, pp. 256-281). The five age groupings used in the systems model were 6 years and 0 months through 7 years and 11 months, 8 years and 0 months through 9 years and 11 months, 10 years and 0 months through 11 years and 11 months, 12 years and 0 months through 13 years and 11 months, and 14 years and 0 months through 16 years and 11 months.

One purpose for grouping by age was to make the analytical statements age appropriate. Functioning level was occasionally clarified by comparing behavior to a typical age group, such as in the following statement taken from the analytical statements for interpreting the Vocabulary subtest (for ages 8-0 to 9-11 and scaled scores of 1, 2, or 3): "His understanding of the meaning of words was comparable to the normal five to six year old." This gave the user a reference level and amplified the previous statement, "He had an extremely limited receptive and/or expressive vocabulary." A person reading the psychological report might ask, 'What does 'extremely limited' mean?" Giving an age level with comparable language development helped explain the meaning of extremely limited. For example,

according to the table of norms a nine-year-old with an "extremely limited" vocabulary would compare with the average five- or six-year-old while a seven-year-old with a "limited oral vocabulary," or who "had a definite weakness in understanding the meaning of words in common usage among children that age" would also compare with the average five- to six-year-old in language development based on the raw scores they received in the Vocabulary subtest.

Age levels also allowed for clarifying the skill level where the student was functioning since the same scaled score responded to different raw scores at various age levels. Therefore, a scaled score of 5 in arithmetic, for example, indicated the ability to count for a seven-year-old while the same scaled score would include the ability to add and subtract in a 13-year old. While they both indicated deficiencies in arithmetic for the respective students, the appropriate instructional level would not be indicated if only a deficiency statement were made. Psychological reports, or evaluations, should provide information to facilitate the instructional planning for the evaluated student.

Scores with Matching Gradation of Analytical Statements

The possible range of scaled scores was also important to the systems model. The conversion tables in the manual for WISC-R provided for 19 possible scaled scores with 10 being the mean. Groupings of scaled scores were utilized in the systems model to reduce the amount of duplication that would otherwise be excessive since identical statements

could be used for all those scores within the groups provided. For example, scaled scores 9 through 11 are all within the normal range so no distinction needs to be made between them. The groupings were 1 through 3, 4 through 5, 6 through 8, 9 through 11, 12 through 15, 16 through 19. These groupings were selected because they approximate the intellectual classifications provided by both the WISC-R (Wechsler, 1974, p. 26) and the Stanford-Binet (Terman & Merrill, 1973, p. 18). Some distortion was allowed in the groupings of scaled scores so that the systems model would better correspond to educational distinctions. An educational distinction has been made within the mentally deficient group of students, for example. The lower mentally deficient categories have been classified as trainable and the higher levels of mental deficiency have been classified as educable in Florida (SBEAP 6A-6.3011). The systems model was designed to reflect the distinction by grouping so that scores more comparable to the two recognized levels were separated. Scales scores of 1 to 3 were more comparable to the students classified as trainable mentally retarded while scaled scores of 4 and 5 were more comparable to students classified as educable mentally retarded. Since no similar educational distinction existed within the upper range, larger groupings of scaled scores were allowed within the systems model at the higher end of the range.

The systems model used a variety of terms to minimize redundancy in the analytical statements. Many, but not all, of the analytical statements were designed to start with the student's name or a personal pronoun. Verbs and sentence structure were also varied from subtest to

subtest to minimize redundency. The modifiers used to denote the gradation of the analytical statements to correspond to the scaled scores were

Scaled scores	Modifying terms
1 - 3	Severe deficiency, severely deficient, extremely limited
4 - 5	Deficient, very limited
6 - 8	Weakness, slight weakness, below average
9 - 11	Average, normal, typical
12 - 15	Above average, strength, better than average
16 - 19	Superior, precocious

These terms derive meaning from their systematic use. Therefore, a teacher reading the psychological report after becoming familiar with the systems model will know that a statement including the phrase "extremely limited" indicates the lower three scaled scores and performance comparable to a trainable mentally retarded child in the skill being described.

Relativity Branch

The first branch, the relativity branch, was devised to resolve a common problem in analyzing intellectual evaluations where no strength, or weakness, existed in comparison to the population in general as reflected by the table of norms provided in the WISC-R manual. The scaled scores on the individual subtests were considered to be strengths if they were above average for the general population

and weaknesses if they were below average for the general population. Scaled scores of 1 through 8 were considered to be real weaknesses using this definition while scaled scores of 12 through 19 were considered to be real strengths. Within the average range, scaled scores of 9 through 11, the scores represented neither strengths nor weaknesses

A relative strength, or relative weakness, was determined by the student's own scores as a reference point rather than the table of norms presented in the manual. Therefore, scores above the evaluated student's average scores were considered to be relative strengths while scores below the student's average were considered to be relative weaknesses. A student may have had no score above the level considered to be a weakness and yet have a relative strength when his or her own scatter of scores were considered Similarly, a student may have had all above average scores and displayed a relative weakness.

The relativity branch allowed for appropriate analytical statements based on the evaluatad student's own profile of scores rather than the population in general. For planning interventions it is important that both strengths and weaknesses be specified if they are only relative strengths or weaknesses in comparison to the evaluated student's own profile of scores. Educational interventions are primarily planned to remediate, or ameliorate, weaknesses. Therefore, activities are suggested in the recommendations section of the systems model for ameliorating the weaknesses exhibited by the student evaluated. Strengths, including relative strengths, are helpful for the teacher to know because they can be used as stress relieving activities

Intra-subtest Scatter Branch

Although inter-subtest scatter, that is the difference between subtests, is common, intra-subtest scatter, that is the difference in the number of correct item responses within a subtest, is usually limited. This fact indicates the importance of the second branch since unusual happenings can invalidate the common interpretation of results and this branch helps protect against that happening. For this reason the intra-subtest scatter branch was included in the systems model although many of the subtests were not amenable to intra-subtest scatter (because of the awarding of bonus points for speed on some subtests) and were not included in the second branch. Branching to reflect intra-subtest scatter was developed for Information, Similarities, Arithmetic, Comprehension, and Picture Completion subtests. The measurements of scatter are presented in the systems model found in Appendix D.

Due to the development of the WISC-R using progressively more difficult items within each subtest, sporadically correct responses beyond an acceptable level suggested uneven or yet developing skills that were important to the analysis. Sporadic, or uneven, skills have been cited as symptomatic of children with learning disabilities (Lerner, 1971, p. 45). Since many of the referrals for evaluation of children within the school district have been for potentially learning disabled children, this branch adds a worthwhile dimension to the psychological report. An example of the difference in analytical statements in the intra-subtest scatter branch would be for six-year old John's responses on Comprehension. If he had a scaled score of

12 and there was a limited scatter of responses, the following statement would apply 'John was above average in social awareness and practical reasoning skills." If, on the other hand, he had exhibited intra-subtests scatter in his responses, the following statement would have applied. "John was above average in social awareness and practical reasoning skills. However, some gaps at lower levels suggested possible learning imbalances."

The intra-subtest scatter branch is an infrequently used part of the systems model because it is a guard against invalid statements caused by unusual scatter within a subtest. In randomly selecting psychological reports for analyses with the systems model for the evaluation phase of the study, it happened that none of the selected results displayed sufficient scatter to utilize the intra-subtest scatter branch.

Quality Response Branch

The third branch, the quality response branch, was designed to provide appropriate modifications to the analytical statements for the three subtests of the WISC-R which differentiate between acceptable responses and quality responses. The Similarities, Vocabulary, and Comprehension subtests provide scoring criteria to allow for such a discrimination. Acceptable responses in each of these subtests were scored as one while quality responses were scored as two. Specific criteria and examples were provided in the WISC-R manual for discrimination between acceptable and quality responses.

In the quality response branch, statements were modified to recognize the quality of the responses. Seven-year-old Johnnie, for

example, who achieved a scaled score of 6 on the Similarities subtest would have received the following analytical statement if he had fewer than three quality responses. "Johnnie exhibited a slight weakness in conceptual development." However, if he had responded to three or more of the Similarities items with quality responses, which would involve a higher level of abstract reasoning but fewer correct responses, while having the same scaled score the appropriate analytical statement would have been, 'Although Johnnie's concept formation was weak, some abstract concepts were within his repertoire in addition to concrete classifications."

Recommendations

The recommendations provided in the psychological reports produced by using the systems model included a general recommendation followed by one or more specific ones. The general recommendation addressed the possible eligibility of the student for an exceptional student program based on rules established in Florida. State Board of Education Administrative Rules establish very specific criteria for eligibility for different special education programs. For example, SBEAR 6A-6.3011(1)(a) states that the measured intelligence of an educable mentally retarded student "falls between two (2) and three (3) standard deviations below the mean.' Therefore, it is up to the school psychologist (in the psychological report) to provide information in such a way that a staffing committee can make a decision concerning the student's eligibility for a particular special education program without making an actual recommendation for placement. The

recommendation for placement should be made by a staffing committee after reviewing all available evaluation data on the student in accordance with SBEAR 6A-6.331(2). The regulations were followed in developing the general recommendation

The specific recommendations followed the general recommendation. They corresponded to weaknesses the student exhibited on the test Typically, three or more specific recommendations were included in the psychological report The specific recommendations for ameliorating weaknesses were taken from the review of the literature or were created by the researcher to correspond to the type of learning that the test items sampled For example, a seven-year-old with a deficient score (5 or below) in Arithmetic still lacks adequate skills in counting and is functioning poorly on the pre-computational level (based on the demonstrated performance on the test) A recommendation that the child be taught to count is expected but is not quite sufficient Other pre-computational activities are also recommended in the systems model to provide an appropriate educational plan for the student

The recommendations are adjusted for each age level. At each higher age level some lower level activities are dropped and higher level activities are added to maintain a parallelism with the skill levels that denote deficiencies at that age range There was no intention to match recommendations to specific test items That would be both inappropriate and unethical Instead, an attempt was made to suggest activities in a concrete way to provide a foundation for an intervention plan to meet the student's unique needs

CHAPTER FOUR
EVALUATION OF THE SYSTEMS MODEL

The evaluation of the systems model utilized a secondary approach by comparing the product of the systems model, a psychological report, to existing psychological reports which had been prepared by school psychologists. The evaluation phase was conducted using the double-blind procedure such as that recommended by Anderson (1966, p. 31) for conducting psychological experiments. This procedure controlled for errors caused by the respondent's awareness of which experimental condition he or she was in and the experimenter's knowledge of which respondents evaluated the psychological reports prepared by using the systems model and which respondents evaluated the psychological reports that had been prepared by a school psychologist. The respondents were "blinded" since they were mailed identical information and evaluation instruments but different psychological reports. They had no way of knowing if the psychological report that they had been asked to evaluate had been prepared by a school psychologist or by using the systems model. Preparation for the evaluation included selection of the respondents, development of the evaluation instrument, determining the response procedures, and the selection and preparation of the psychological reports to be evaluated.

Procedures

Selection of the Respondents

Since the impact of the increased demand for psychological evaluations has brought increased workloads to both the school psychological services and the exceptional student programs, it was determined that the administrators of these two departments should be the respondents asked to evaluate the systems model. Therefore, an attempt was made to have the administrators of school psychological services and the administrators of exceptional student programs for each school district in Florida serve as evaluators of the psychological reports.

Official 1979-80 listings from the Florida Department of Education were used in compiling the list of potential respondents (DOE, Note 2). Because many duplications were noted in the listing of administrators of exceptional student programs and school psychological services, the duplications were eliminated as the first step. The remaining 104 names were numbered consecutively in the order listed beginning with the list of administrators of exceptional student programs. Since the psychological reports alternated between those having been prepared by school psychologists and those prepared by using the systems model, they were evenly distributed to the selected administrators.

Development of the Evaluation Instrument

There were a number of questions of interest concerning the relative effectiveness of the systems model in comparison to the typical psychological report prepared by school psychologists employed in the

state of Florida. The first eight questions concerned the major aspects of importance taken from the review of the literature dealing with the contents of psychological reports. Questions 9 and 10 were developed by the researcher and were important to judge the respondent's reaction to the systems model. An expected criticism of a systems model might be that it would treat the student in an impersonal manner. The evaluation of that aspect was, therefore, important as was the perceived comparability of the psychological report to the average psychologist-prepared report in the respondent's file. The last two questions, numbers 11 and 12, addressed the effectiveness of the psychological report prepared by using the systems modal to meet the specific needs of the exceptional student programs. These were also important questions since the primary function of school psychologists is the evaluation of students to determine their eligibility to receive special education services. For purposes of comparison the questions were limited to the following:

1. Is the psychological report clear and unambiguous?
2. Is it well organized?
3. Is it of appropriate length?
4. Was important information left out?
5. Were the statements concerning analysis (or interpretation) of performance helpful in understanding the student's problem?
6. Were there appropriate recommendations for remediating or ameliorating the student's difficulties?

7 How useful was the psychological report for determining the student's level of intellectual functioning (or IQ)?

8 Were the student's strengths and weaknesses defined?

9 Is this psychological report comparable to the average report in your files?

10 Did the psychological report treat the student in an impersonal manner?

11 Would the psychological report be useful in making a decision concerning the student's eligibility for placement in an exceptional student program?

12 Would this psychological report be useful in writing an individual educational plan (IEP) if the student were found to be eligible for placement in an exceptional student program?

The respondents were asked to respond to a relative scale from 1 to 5 for each question. The values of the ratings had brief clarifying comments. For example, on question 1 a rating of 1 indicated "very unclear," a rating of 2 indicated "slightly unclear, a rating of 3 indicated "so-so," a rating of 4 indicated "fairly clear," and a rating of 5 indicated "very clear." On question 3 the comments ranged from "much too short or long," to 'very appropriate length." The evaluation instrument and the letter sent to the administrators selected to evaluate the psychological reports can be found in Appendix A.

Determining Response Procedures

Choosing between mailed questionnaires and randomly selected personal interviews for evaluating the product of the systems model presented a problem. There were advantages and disadvantages to both procedures. Generally, personal interviews in conjunction with the evaluation were expected to provide more subjective information that could lead to improvements of the systems model. However, personal interviews could have yielded biased responses since the respondents might know when they were responding to a psychological report prepared by using the systems model based on the interviewer's unintentional cues. The double-blind procedure seemed to enhance the value of the evaluation. A second advantage of the mailed responses was that they were time efficient for the respondents. The time expended on reading the psychological report and responding to the evaluation instrument was in most cases 5 to 15 minutes.

The major disadvantage of using the mailed response procedure was possible bias due to non-responses. However, since the responses received were relatively balanced between those psychological reports having been prepared by school psychologists and those prepared by using the systems model, any error caused by this bias should have been randomly distributed and have had little impact on the study. Responses were received from approximately 60% of the selected administrators.

Of the 104 psychological reports mailed for evaluation, 32 systems and 30 psychologist-prepared reports were returned in time to

be included in the study, four were returned too late for inclusion in the study, two were returned undelivered, and 36 were not returned at all. Since the evaluation was conducted during the summer many confounding variables could have contributed to the non-response The non-responses were distributed among small (19), medium (13), and large (4) school districts and between administrators of exceptional student programs (23) and school psychological services (13).

In examining the distribution of non-responses it is important to keep in mind two facts. The first is that only 8 to 10 of the school districts in Florida are generally classified as large with the remainder being classified either medium or small districts. The distinction used in this study was large districts--over 40,000, medium districts--5,000 to 40,000 students, and, small districts--less than 5,000 students

The second fact that impacts on the apparent discrepancy between administrators was the way of eliminating duplications on the two lists. Due to duplications on the lists of administrators of the exceptional student programs and administrators of school psychological services 30 nsmas were dropped from the second list, the administrators of school psychological services. Therefore, there were almost twice as many respondents who were classified as exceptional student program administrators involved in the evaluation phase of the study. It would appear that any bias due to non-responses was randomly distributed and has had little, or no, impact on the study.

A brief letter was sent to each of the selected administrators asking them to evaluate a psychological report for the study. A psychological report, an evaluation instrument, a return envelope, and a three-by-five card to request a brief summary of the study was provided along with the letter to the selected administrators. The evaluation instrument was numbered to identify the psychological report for analysis purposes. The respondants could have remained anonymous if they chose but the majority identified themselves. For example, a few of the administrators of school psychological services had changed positions since the official Florida department of education listing was published and the new administrators wrote notes to explain that they responded in place of the selected administrators. The letters to the selected administrators suggested that the request for a summary of the study, if it were desired, could be mailed separately, yet 52% of the respondants enclosed the request card along with the evaluation. None was received separately.

Selection and Preparation of the Psychological Reports

To offset any possibility of biasing the results by an unfortunate random selection of a single report, a number of psychological reports were used in the evaluation phase. Five psychological reports were randomly selected from the files of a small school district in Florida. The number five was arbitrarily selected to provide a systematic numbering sequence. Because each data set was also subjected to the systems model there were 10 different psychological reports (five pairs) selected at random and sent to evaluators.

The numbering system was used to identify the psychological reports, with odd numbers used for those having been prepared by school psychologists and even numbers for those prepared by using the systems model.

A random number table was used to select the psychological reports from the file with a preestablished rule that only one psychological report by any school psychologist would be used. This rule was made to help achieve a representative sample of reports. Four reports selected by using the random number table were rejected because they were prepared by a school psychologist already represented in the selected sample.

Each of the selected five psychological reports were retyped with identifying data and results on supplementary tests eliminated. Clinical observations and interview information remained intact. The rationale for eliminating supplementary test data was that such data constituted a major confounding variable since the systems model was developed for the WISC-R only.

Each of the psychological reports selected randomly from the files was also analyzed by using the systems model. This was accomplished by use of a computer program, Stars II, developed by John Hickens at the University of Florida. The person entering the information into the computer-based systems model entered only identifying information, selected responses for observations, and raw score information. For the study, fictious first names were used with the subject's actual date of birth (essential for calculating IQ) and the date

of the original test. The computer output was retyped to prevent identification of the systems model. The time expended in preparing the psychological reports by using the computer-based systems model, exclusive of retyping, was approximately 10 minutes each.

Results of the Evaluation

The evaluation phase was conducted using a mail procedure which allowed for blinding the respondents as to the source of the psychological report that they were asked to evaluate. The results were analyzed using a separate variance estimate *t*-test technique to determine if the evaluations of the two groups of psychological reports were significantly different. The null hypothesis was that there was no significant difference in the mean evaluation of each question on the evaluation instrument for psychological reports prepared by school psychologists and psychological reports prepared by using the systems model.

The *t*-test technique has been found to be robust and appropriate even when some of the underlying assumptions were violated (Boneau, 1960). Boneau concluded that "By the time the sample sizes reach 25 or 30, the approach should be close enough that one can, in effect, ignore the effects of violation of assumptions except for extremes" (p. 63). Since the sample sizes were 30 for psychological reports prepared by school psychologists and 32 for psychological reports prepared by using the systems model and the distributions were relatively normal it was safe to use the *t*-test technique which was more rigorous than nonparametric.

No attempt was made to compare results of evaluations of individual psychological reports. The multiple examples included in the evaluation to eliminate unique differences would have confounded such analysis.

The most appropriate way to examine the results was to compare responses question by question since each question was independent. The results of the evaluation, presented in Table 1, indicated that the null hypothesis must be rejected for each comparison On each question the ratings of the psychological report prepared by using the systems model, presented as group 2 in Table 1, was rated higher using the .01 level of significance

In considering important aspects of a psychological report including clarity, organization, appropriateness of length, inclusion of all essential information, appropriateness of interpretation, appropriateness of recommendations, usefulness in determining the student's level of intellectual functioning, and defining strengths and weaknesses, the systems model was shown to be an effective substitute for what Meehl (1956) called a costly middleman. The results support the utilization of the systems model for analyzing and reporting the test results of the WISC-R

In reviewing the results of the evaluation some generalizations help clarify the ratings. The raters exhibited a tendency within their individual evaluation to score all questions similarly which suggested a global reaction to the psychological report they had been asked to evaluate This appearance of a global reaction can

TABLE I

RESPONDENT'S RATINGS ON EACH QUESTION
OF THE EVALUATION INSTRUMENT

Question		N	Mean	S.D	t Value	Degrees of Freedom	2-tail Probability
1	Group 1	30	2.933	1.172	-4.78	52.93	.000
	Group 2	32	4.188	.859			
2	Group 1	30	3.033	.928	-4.17	59.97	.000
	Group 2	32	4.063	1.014			
3	Group 1	30	1.933	1.081	-5.35	59.35	.000
	Group 2	32	3.375	1.040			
4	Group 1	30	1.367	.490	-4.74	42.81	.000
	Group 2	32	2.406	1.132			
5	Group 1	30	2.300	1.055	-4.94	58.26	.000
	Group 2	32	3.563	.948			
6	Group 1	30	1.867	1.196	-6.97	55.09	.000
	Group 2	32	3.438	.941			
7	Group 1	30	2.733	1.112	-6.89	52.45	.000
	Group 2	32	4.438	.801			
8	Group 1	30	2.367	.964	-5.75	59.74	.000
	Group 2	32	3.875	1.100			
9	Group 1	30	1.967	1.217	-3.90	59.99	.000
	Group 2	32	3.219	1.313			

TABLE 1--Continued

Question		N	Mean	S.D.	t Value	Degrees of Freedom	2-tail Probability
10	Group 1	30	2.033	1.217	-3.62	59.87	.000
	Group 2	32	3.219	1.362			
11	Group 1	30	2.233	.971	-4.49	59.90	.000
	Group 2	32	3.469	1.191			
12	Group 1	30	1.867	1.074	-6.22	59.81	.000
	Group 2	32	3.688	1.230			

be demonstrated in the following observation Although the psychological reports which had been prepared by school psychologists were rated significantly lower on question 2 which stated "Is it well organized?" the organizational structure was highly comparable to the psychological reports prepared by using the systems model All 10 psychological reports used in the evaluation phase of the study included sections for referral information or general obeservation statements, results, and summary and/or recommendations.

Another general finding is reflected in the statistical results presented in Table 1. There was consistency among respondents in rating the different questions on the evaluation instrument. The low standard deviations reflect the consistency However, the range for most questions was the total possible range.

Although the psychological reports prepared by using the systems model were rated significantly higher on all 12 questions, there were three questions that reflected the major distinction between the two groups. These questions were

6. Were there appropriate recommendations for remediating or ameliorating the student's difficulties?
7. How useful was the psychological report for determining the student's level of intellectual functioning (or IQ)?
12. Would this psychological report be useful in writing an individual educational plan (IEP) if the student were found to be eligible for placement in an exceptional student program?

The differentiation of the two groups of psychological reports on those three items was important. Two of the questions, 6 and 12, addressed the usefulness of the psychological report as a prescriptive technique for ameliorating the student's weaknesses. Practical recommendations for teachers to implement were stressed by Hayes and Clair (1976) as an essential element of a psychological report.

Twenty comments were written on the evaluation instruments in addition to seven written on separate pages. The comments written on the evaluation instruments tended to explain the respondent's reason for a particular rating although some critique of the psychological reports were also apparent. Examples of the tendency to explain the respondent's rating to question 9, which was "Is this psychological report comparable to the average report in your files?" included the comment "we are aiming for change' by a rating of 4 on a psychological report prepared by a school psychologist, and the comment "it is better" by a rating of 2 on a psychological report prepared by using the systems model. In both cases the note explained why the specific rating deviated from the other ratings on the evaluation instrument. The mode on the first example was 2 while the mode on the second example was 4.

Another example of using comments to explain ratings was when a respondent circled the 3 rating (for don't know) on an evaluation instrument for question 4 which was "Was important information left out?" and wrote in the following comments, "if WISC scores only--no" and "other info to determine eligibility--yes!' This was a very

pertinent observation to the question since most of the respondents felt that important information was, indeed, omitted. Question 4 had the lowest ratings for both groups of psychological reports. Other comments indicated what the respondents felt had been left out. Only eight respondents indicated in their ratings that nothing was omitted.

CHAPTER FIVE
SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Summary

The many demands for the school psychologist's time encourage the administrator of school psychological services to seek a system for effective and efficient delivery of the various services provided. With the majority of the school psychologist's time being spent in student evaluation services, any appreciable time savings must be made in this area.

The problems of the study were (1) to develop a systems model for analyzing the results of the WISC-R, and producing a psychological report of the student's intellectual functioning, and (2) to evaluate the systems model. In developing the systems model, the interpretations of the WISC-R subtests supported in the literature were translated into a comprehensive set of analytical statements to correspond to the possible range of scaled scores. The comprehensive set of analytical statements systematically varied to correspond to the three major variables: the WISC-R subtest, age of student, and scaled score achieved. Branches were provided to accommodate minor variables. Additionally, recommendations for ameliorating the evaluated student's weaknesses were linked to the results in age appropriate groupings.

The psychological report produced by using the systems model includes three sections for clarity and uniformity. These sections

are observations, test results, and recommendations. Klopfer (1960) suggested the use of sections to improve the readibility of the psychological report.

Evaluation of the systems model was conducted using the product, or psychological report. The psychological reports prepared by using the systems model were compared with psychological reports randomly selected from the files of a school district in Florida. Administrators of exceptional student programs and administrators of school psychological services were asked to evaluate one of the two types of psychological reports using an instrument provided. The respondents did not know if the psychological reports they were asked to evaluate was prepared by using the systems model or had been prepared by a school psychologist.

Klopfer (1960) stressed that a psychological report must be clear, well-organized, and concise. These aspects were addressed by the first three questions of the evaluation instrument. Rucker (1967) indicated that the psychological report must explain the student's problem in a useful way and provide appropriate recommendations for working with the student. The evaluation instrument was designed to assess the aspects considered important in preparing a psychological report as indicated in the review of the literature. The results of the evaluation favored the psychological report prepared by using the systems model on all 12 aspects rated.

Implications

The null hypothesis was rejected in favor of the psychological reports prepared by using the systems model. Therefore, an implication

was that the quality of psychological reports can be improved by utilizing such a systems model. A comparison of psychological reports prepared by using the systems model and samples prepared by school psychologists indicated that systematically prepared reports were better than some psychological reports currently existing in the files of Florida school districts and, therefore, could be useful.

Holtzman (1960) pointed out that there were three phases involved in psychological evaluations: the actual testing, conversion of raw data into information for analysis, and the analysis of the test results. If the second and third phases could be done with a significant time savings it would improve the efficiency of school psychological services. The results of the evaluation of the study indicated that the analysis could be done utilizing a systems model rather than by a school psychologist without a loss in quality, based on the major aspects of a psychological report as viewed by experts in the field.

Meehl's statement that "the clinical interpreter is a costly middleman who might better be eliminated" (1956, p. 271) has as much meaning and impact in the 1980s as it did when he made it in the 1950s. Computers have proven their superiority in quickly and accurately converting and compiling data (Robinson, 1973, p. 238) which would indicate that that task should be relegated to the efficiency of technology and free school psychologists for more meaningful tasks that require highly trained personnel.

Recommendations for Further Research

The results of the study support Meehl and Shapiro in their conclusions that computers and systems models can effectively and efficiently be a tool for school psychologists to provide the various services without sacrificing quality. The ratings of the psychological reports prepared by using the systems model were higher than the ratings of the psychological reports prepared by school psychologists. However, there was one question that received low ratings on both sets of reports. Question 4, which asked, "Was important information left out?" received a mean score of 1.36 for psychological reports prepared by school psychologists and a mean score of 2.41 for psychological reports prepared by using the systems model. These low scores indicate that important information was omitted from both sets of reports. Comments written on the evaluation instruments and on additional pages indicated that other supplementary test data were the important information missing in view of the many evaluators.

Further research on developing a supplementary model for analyzing other tests commonly included in the psychological test battery is recommended. Such tests as the Wide Range Achievement Test, the Peabody Individual Achievement Test, the Bender Gestalt Visual-Motor Integration Test, and an adaptive behavior assessment were the most common suggestions made on the comments received. A systems model incorporating one or more of these tests along with the WISC-R should be developed. The results of the study suggest that such an expenditure of time would, as Meehl suggested, be an efficient use of time

since the subsequent time sevings resulting from the investment would be lerge.

Another erea of research thet is recommended based on the current findings is e direct eveluetion of the recommendations mede in psychological reports. If there is e generel weekness in the recommendations mede by school psychologists, the effectiveness of school psychologicel services may elso need ettention. Such e potentiel weekness cennot be inferred from the study but is of such importance to warrent e study

PEFERENCE NOTES

1. Lamb, J. Statement made at Coordinators of Exceptional Student Programs Conference, March 22, 1978.

2. State Department of Education. Student Services Directors Directory. Author, 1979.

APPENDIX A
LETTERS TO SELECTED ADMINISTRATORS
INCLUDING THE EVALUATION INSTRUMENT

Dear

I have been involved in developing a systems model for analyzing and reporting the results of the Wechsler Intelligence Scale for Children--Revised (WISC-R). This model could be of great use to you and your associates. Your help in evaluating the model will greatly enhance its usefulness.

Please rate the enclosed psychological report using the attached evaluation form. Additionally, please randomly select from your own files a psychological report of a WISC-R and return it with the evaluation form (with all personally identifiable information removed, of course).

Thank you for your time and help. If you would like a brief summary of the results, place your name and address on the enclosed card and return it with your evaluation, or, if you prefer, place it in a separate envelope.

Sincerely,

Effie Hall

circle responses

EVALUATION

1. Is the psychological report clear and unambiguous?

1	2	3	4	5
very unclear	slightly unclear	so-so	fairly clear	very clear

2. Is it well organized?

1	2	3	4	5
very poorly organized	weak organization	so-so	good organization	very well organized

3. Is it of appropriate length?

1	2	3	4	5
much too short or long	slightly too short or long	so-so	good length	very appropriate length

4. Was important information left out?

1	2	3	4	5
very important information	some information	don't know	nothing left out	exactly right

5. Were the statements concerning analysis (or interpretation) of performance helpful in understanding the student's problems?

1	2	3	4	5
not at all helpful	not very helpful	don't know	helpful	very helpful

6. Were there appropriate recommendations for remediating or ameliorating the student's difficulties?

1	2	3	4	5
none or very inappropriate	too few	so-so	good recommendations	excellent recommendations

7. How useful was the psychological report for determining the student's level of intellectual functioning (or IQ)?

1	2	3	4	5
not at all	not enough	don't know	a little	a lot

8. Were the student's strengths and weaknesses defined?

1	2	3	4	5
not at all	not enough	don't know	a little	thoroughly

9. Is this psychological report comparable to the average report in your files?

1	2	3	4	5
not at all	not much	don't know	a little	very comparable

10. Did the psychological report treat the student in an impersonal manner?

1	2	3	4	5
very	a little	don't know	not much	not at all

11. Would this psychological report be useful in making a decision concerning the student's eligibility for placement in an exceptional student program?

1	2	3	4	5
not at all	not enough	don't know	a little	a lot

12. Would this psychological report be useful in writing an individual educational plan (IEP) if the student were found to be eligible for placement in an exceptional student program?

1	2	3	4	5
not at all	not enough	don't know	a little	a lot

APPENDIX B
PSYCHOLOGICAL REPORTS
PREPARED BY SCHOOL PSYCHOLOGISTS

PSYCHOLOGICAL REPORT

NAME: Judy J.
D.O.B.: 12-22-68
REFERRED BY:
PARENT:
DATE TESTED: 11-2-79

SCHOOL:
GRADE: 4
SEX: Female
RACE: White

REASON FOR REFERRAL:

Placement

OBSERVATIONS:

Judy says that she has eight brothers and sisters and only one child is younger than she is. Both parents work in the groves. She was very nervous and has a speech problem.

TEST RESULTS:

Her WISC-R scores place her in the mentally deficient ability range (below 69). There is a perfect balance between her verbal and performance scores. She scored highest on the picture completion and coding subtest and she scored as low as possible to score on three subtests.

SUBTESTS:	Scaled Scores
Information	2
Similarities	2
Arithmetic	4
Vocabulary	1
Comprehension	5
Picture Completion	6
Picture Arrangement	1
Block Design	1
Object Assembly	2
Coding	5

RECOMMENDATIONS:

She be considered for placement in the EMR class.

PSYCHOLOGICAL REPORT

NAME Donnie D.
DATE OF TEST. 8-27-79
SCHOOL
REFERRED BY
EXAMINER

BIRTHDAY 7-12-[illegible]
AGE. 7-1
GRADE 2
SEX Male

REFERRAL INFORMATION

Donnie was tested on 11-27-1978. At that point, he received a full scale score of 67, and verbal 69. However, due to a lot of subtest scatter and behavioral indicators, SLD rather than EMR placement was recommended at that point. He failed a vision screening test and consequently was never placed. Donnie has since received glasses and has been put on medication so another evaluation was requested.

TEST ADMINISTERED

Wechsler Intelligence Scale for Children--Revised (WISC-R)

OBSERVATIONS:

Donnie was a highly distractible, responsive, good-looking, black boy. His speech was difficult to understand; his language was immature. Donnie was very active and fidgety throughout the evaluation--he frequently got out of his seat and roamed about the room. He was also quite affectionate--he hugged or kissed the examiner several times.

RESULTS:

Donnie received a verbal score of 80 and a performance score of 77 for a full scale score of 77 on the WISC-R. This score puts him in a borderline retardation intelligence range. There was quite a bit of variation in his performance on different subtests. Donnie's verbal comprehension and spatial skills were in an average to dull normal range while his educational and sequencing/short-term memory skills were in an EMR range. His auditory short-term memory was particularly weak.

SUBTESTS.	Scaled Score
Information	5
Similarities	10
Arithmetic	3
Vocabulary	8
Comprehension	8

SUBTESTS (Continued):	Scaled Score
Picture Completion	10
Picture Arrangement	6
Block Design	3
Object Assembly	10
Coding	6

SUMMARY AND RECOMMENDATIONS:

Donnie is a likable, highly distractible black boy with uneven intellectual functioning. He is seriously underachieving in reading. He has deficits in the areas of sequencing/short-term memory and visual perceptual motor skills. The following is recommended:

1. Placement in an SLD unit, while there, further testing to pinpoint more specifically areas of needed remediation, should take place.

2. The examiner is available for consultation on methods of increasing Donnie's on-task behavior and decreasing his high activity level. It is strongly recommended that such services be utilized in this case.

3. This child should be screened at an in-school staffing where follow-up strategies will be discussed.

4. This child should be scheduled for screening at the next exceptional program staffing.

PSYCHOLOGICAL REPORT

March 15, 1980

Identifying Data

Donnie D. is a 14-year-old white male presently residing with his mother and stepfather and is attending school at _____, where he is in the special education program.

Procedure

This child was given the WISC-R (Wechsler Intelligence Scale for Children--Revised). Testing took place at the school.

Findings.

Scores on the WISC-R were obtained as follows:

Verbal IQ Score	70
Performance IQ Score	82
Full Scale IQ Score	72

Discussion

These tests results, while showing slightly higher scores than those recorded for the child in 1976, are indicative of Borderline Mental Retardation. These tests results also show considerably better functioning in non-verbal tasks, with more severe impairment of functioning evident in verbal processes.

PSYCHOLOGICAL REPORT

STUDENT: Donnie O DATE: 1-10-80
DOB 10-15-70
SCHOOL:
TEST ADMINISTERED: WISC-R and Clinical Interview
EXAMINER:

BACKGROUND AND INFORMATION

This 9-year 3-month old male was referred for psychological evaluation in order to secure another opinion after two previous evaluations. On one evaluation the child scored an IQ of 65 and was recommended for placement in EMR classes. Another evaluation had the child scoring in the "Low Average" range of intelligence (IQ of 85). This second evaluation suggested the presence of possible neurological deficits consistent with a diagnosis of "Learning Disability."

RESULTS OF TESTING:

On the WISC-R, this patient scored a Performance IQ of 74, a Verbal IQ of 86, and a Full Scale IQ of 78. This would allow the application of a confidence interval of 73-83. Of particular importance in analyzing these tests results, is to note the high degree of variance in the various subtest scores. This is graphically demonstrated by the copy of the face sheet of the test (enclosed) and numerically outlined on the subtest tally sheet (also enclosed). These test results are consistent with a diagnosis of "Learning Disability" or "MBD." From this sampling of performance, the results would seem to rule out mental retardation. The child shows strengths in the areas of general comprehension, vocabulary skills, general awareness of surroundings, and organization and recognition of materials, and repetitive speed and accuracy drill.

Weaknesses would include general information, higher level abstraction, arithmetic skills, sequencing skills, and abstract design completion.

WISC-R	
Full Scale	78
Verbal IQ	86
Performance	74

Verbal		Performance	
Information	5	Picture Completion	8
Similarities	5	Picture Arrangement	7
Arithmetic	6	Block Design	5
Vocabulary	9	Object Assembly	3
Comprehension	12	Coding	8

SUMMARY AND CONCLUSIONS.

1. The child should be reevaluated at the end of the school term.

2. The child appears to need some kind of individual instruction and educational help

3. The child does not seem to fit within the parameters of mental retardation

4. The child and parent seem to be well adjusted in general.

PSYCHOLOGICAL EVALUATION

STUDENT: Donnie D DATE: 5-21-79
DOB: 11-29-69
SCHOOL:
TEST ADMINISTERED: WISC-R
EXAMINER:

OBSERVATIONS:

Donnie was referred for a comprehensive evaluation because of poor motor coordination and immature behavior. He is left-handed and a slow, methodical worker.

Rapport was easily established since he was pleasant, trusting and a persistent worker.

EVALUATION RESULTS:

WISC-R

Full Scale IQ	71
Verbal IQ	74
Performance IQ	72
Mental Age	6-8

Verbal	Scaled Score	Performance IQ	Scaled Score
Information	4	Picture Completion	6
Similarities	8	Picture Arrangement	6
Arithmetic	5	Block Design	6
Vocabulary	8	Object Assembly	5
Digit Span	6	Coding	6

Donnie achieved a Full Scale IQ of 71 on the Wechsler Intelligence Scale for Children--Revised which placed him in the borderline category for overall intellectual functioning. He presented a balanced profile which does not suggest a learning disability. However, further testing would be desirable prior to staffing him since he could be considered for EMR placement. Only three of the subtest scores were in the retarded range, and only one approached the normal range.

His strength, relative to his overall ability, was in concept formation. His conceptual development is primarily on the concrete level, however.

His weakness was in retention of common environmental information. Such information is usually learned incidentally.

RECOMMENDATIONS

1. Further testing with the DTLA or ITPA is recommended in spite of the flat profile

2. The eligibility staffing committee should determine his most appropriate educational placement following that testing.

3. The spelling approach to reading is suggested

APPENDIX C
PSYCHOLOGICAL REPORTS
PREPARED BY USING THE SYSTEMS MODEL

PSYCHOLOGICAL REPORT

STUDENT: Judy J. DATE: 11-2-79
DATE OF BIRTH: 12-22-68
SCHOOL:
TEST ADMINISTERED: Wechsler Intelligence Scale for Children--Revised
EXAMINER:

OBSERVATIONS:

Judy was referred for a comprehensive evaluation to determine if she was eligible for an exceptional student program and to determine her present level of intellectual functioning. Rapport was established but difficult to maintain.

TEST RESULTS:

Full Scale IQ	51
Verbal IQ	55
Performance IQ	55

Verbal	SS	Performance	SS
Information	2	Picture Completion	6
Similarities	2	Picture Arrangement	1
Arithmetic	4	Block Design	1
Vocabulary	1	Object Assembly	2
Comprehension	5	Coding	6

Judy achieved a Full Scale IQ of 51 which placed her in the mentally deficient category for overall intellectual functioning. Her verbal skills were in the mentally deficient category and her performance skills were in the mentally deficient category. She had a mental age of 5 years and 6 months.

Visual alertness for common elements in the environment was a strength, relative to her overall limited ability. She exhibited a strength, relative to overall abilities, in perceptuel-motor skills. Another strength, relative to her overall defective ability, was in practical reasoning skills.

Judy had an extremely limited receptive and/or expressive vocabulary. Her understanding of the meaning of words is comparable to the normal six to seven year old. She displayed extremely limited understanding of social relationships. She could not understand the

series of events in the simple situations presented. Judy exhibited a severe deficiency in visual-motor coordination. She was unable to perceive and reproduce the simplest designs.

RECOMMENDATIONS

Judy should be referred to an eligibility staffing committee to determine eligibility for an exceptional student program. Other factors besides intellectual deficiencies must be considered. However, she is below minus 3 standard deviations from the mean IQ.

Special instruction in logical problem solving is suggested. Teach what and why facts such as

a. What do we live in, cook on, sleep on, etc.?
b. What do we do about special needs or problems?
c. Why do we have teachers, police, doctors, etc.?
d. Why do we behave in particular ways?

Ameliorating activities in visual sequencing are recommended. Suggested activities include

a. Cut up comic strips to learn the proper sequence of events
b. Copy sequences of beads, blocks, etc.

Special attention should be given to training in visual perception. Ameliorating activities include:

a. Perquetry blocks
b. Geometric drawings
c. Visual discrimination worksheets
d. Spatial relationship worksheets

PSYCHOLOGICAL REPORT

STUDENT: Donnie D. DATE: 5-21-79
DATE OF BIRTH: 11-29-69
SCHOOL:
TEST ADMINISTERED: Wechsler Intelligence Scale for Children--Revised
EXAMINER:

OBSERVATIONS:

Donnie was referred for a comprehensive evaluation to determine if he was eligible for an exceptional student program and to determine his present level of intellectual functioning. Since he was cooperative and comfortable in the testing situation, rapport was easily established and maintained.

TEST RESULTS:

Full Scale IQ	71
Verbal IQ	74
Performance IQ	72

Verbal	SS	Performance	SS
Information	4	Picture Completion	6
Similarities	8	Picture Arrangement	6
Arithmetic	5	Block Design	6
Vocabulary	6	Object Assembly	5
Digit Span	6	Coding	6

Donnie achieved a Full Scale IQ of 71 which placed him in the borderline category for overall intellectual functioning. His verbal skills were in the borderline category and his performance skills were in the borderline category. He had a mental age of 6 years and 8 months.

Donnie exhibited a strength, relative to his overall limited ability, in concept formation and in understanding how two things are related.

Donnie had a deficiency in general information concerning the environment about him. This type of information is usually learned incidentally. Specific instruction on body parts, counting, and recognizing domestic animals would help ameliorate the deficiency.

Donnie exhibited the ability to count but was weak in simple computational skills. He was deficient in such skills compared to chronological peers.

Donnie exhibited a very limited ability to recognize patterns and to assemble parts into meaningful wholes.

RECOMMENDATIONS:

Donnie should be referred to an eligibility staffing committee to determine eligibility for an exceptional student program. Since his IQ falls within a questionable range, careful consideration should be given to the decision. Further testing for a possible learning disability might be considered prior to the staffing.

Special attention is needed in helping him acquire common knowledge. Training is needed in

a. Body parts
b. Calendar facts (such as days, months, holidays and seasons)
c. Monetary values

Special help is needed in pre-computational skills and simple arithmetic including

a. Writing numerals in sequence
b. Matching numerals to the correct number of objects
c. Add single-digit problems when presented visually or orally
d. Subtracting single-digit problems when presented visually or orally

Perceptual training emphasizing part-to-whole organization is recommended. Large puzzles and similar training materials are suggested.

PSYCHOLOGICAL REPORT

STUDENT: Donnie O. DATE: 3-15-80
DATE OF BIRTH: 12-1-65
SCHOOL
TEST ADMINISTERED: WISC-R
EXAMINER

OBSERVATIONS:

Donnie was referred for routine reevaluation. Since he was cooperative and comfortable in the testing situation, rapport was easily established and maintained.

TEST RESULTS:

Full Scale IQ	74
Verbal IQ	70
Performance IQ	82

Verbal	SS	Performance	SS
Information	5	Picture Completion	8
Similarities	2	Picture Arrangement	9
Arithmetic	6	Block Design	4
Vocabulary	7	Object Assembly	8
Comprehension	6	Coding	8

Donnie achieved a Full Scale IQ of 74 which placed him in the borderline category for overall intellectual functioning. His verbal skills were in the borderline category while his performance skills were in the dull normal category. He had a mental age of 10 years and 6 months.

STRENGTHS:

Donnie displayed typical skills in understanding social relationships and visual sequencing tasks. His ability to grasp the total situation when it was presented visually was normal for his age group.

Visual alertness for common elements in the environment was a strength, relative to his overall limited ability.

Another strength, relative to his overall ability was in perceptual organization, particularly in the ability to recognize patterns and to assemble parts into meaningful wholes.

Donnie exhibited another strength, relative to his own overall abilities, in perceptual-motor skills.

WEAKNESSES:

Donnie had a severe deficiency in concept formation.

He exhibited deficient visual-motor coordination. He had difficulty reproducing the presented block design.

He had a deficiency in general information concerning the environment about him. This type of information is usually learned incidentally.

RECOMMENDATIONS:

1. Donnie should be referred to an eligibility staffing committee to determine eligibility for an exceptional student program. Since his IQ falls within a questionable range, careful consideration should be given to the decision. Further testing for a possible learning disability might be considered prior to the staffing.

2. Special attention is needed in helping Donnie acquire common knowledge. Training is needed in

   a. Common happenings and current events
   b. Local and national news
   c. Calendar facts (such as the number of days in a week, month, or year, seasons, and holidays)
   d. Important facts (including a wide variety of aspects such as: a few important presidents of the U.S., inventors, space explorations, geography, body functions, occupations, etc.)

3. Special instructions in conceptual development is suggested with abstract concepts being stressed. Help Donnie learn to group things by classification and place things into appropriate categories.

4. Special attention should be given to training in visual perception. Ameliorating activities include

   a. Geometric drawings
   b. Visual discrimination worksheets
   c. Spatial relationships worksheets

PSYCHOLOGICAL REPORT

STUDENT: Donnie D. DATE: 8-27-79
DATE OF BIRTH: 7-12-72
SCHOOL:
TEST ADMINISTERED: Wechsler Intelligence Scale for Children--Revised
EXAMINER:

OBSERVATIONS:

Donnie was referred for a routine reevaluation. He was previously tested with the WISC-R and the results should be reviewed with this in mind. He was referred to determine appropriate educational placement. He was hyperactive during testing.

TEST RESULTS:

Full Scale IQ	77
Verbal IQ	80
Performance IQ	77

Verbal	SS	Performance	SS
Information	5	Picture Completion	10
Similarities	10	Picture Arrangement	5
Arithmetic	3	Block Design	3
Vocabulary	8	Object Assembly	10
Comprehension	8	Coding	5

Donnie achieved a Full Scale IQ of 77 which placed him in the borderline category for overall intellectual functioning. His verbal skills were in the dull normal category while his performance skills were in the borderline category. He had a mental age of 5 years and 5 months.

Donnie exhibited normal development in concrete reasoning abilities and the skill to discriminate between essential and superficial similarities. However, lack of uniformity suggested possible learning disabilities.

Donnie exhibited normal alertness and long-term visual memory. This means he can revisualize common objects with all of their details.

Donnie exhibited normal perceptual organization, particularly the ability to recognize patterns and organize the parts to create meaningful wholes.

Donnie was very deficient in pre-arithmetic skills such as counting. He exhibited a severe deficiency in visual-motor coordination. He was unable to perceive and reproduce the simplest designs.

Donnie had a deficiency in general information concerning the environment about him. This type of information is usually learned incidentally. Specific instructions on body parts, counting, and recognizing domestic animals would help ameliorate the deficiency. He displayed a very limited understanding of social relationships and the logical sequence of events. He was also deficient in perceptual-motor skills. His eye-hand coordination needs specific attention with ameliorating activities.

RECOMMENDATIONS:

Further testing is indicated by the scatter of subtest scores. Specifically, psychological process testing for possible learning disabilities should be considered.

Special help is needed in pre-computational skills and simple arithmetic including

a. Counting objects
b. Recognizing numerals
c. Writing numerals in sequence
d. Matching numerals to the correct number of objects
e. Add single-digit problems when presented visually or orally
f. Subtract single-digit problems when presented visually or orally

Special attention is needed in helping him acquire common knowledge. Training is needed in

a Body parts
b Calendar facts (such as days, months, holidays, and seasons)
c. Monetary values

Special attention should be given to training in visual perception. Ameliorating activities would include

a. Parquetry blocks
b. Form boards
c. Geometric drawings
d. Visual discrimination worksheets
e Spatial relationships worksheets

Ameliorating activities in visual sequencing are recommended. Suggested activities would include

a. Cut up comic strips to learn the proper sequence of events
b. Copy sequences of beads, blocks, etc.

Training is needed in psycho-motor tasks. Special attention needs to be given to fine motor coordination, motor speed, and visual memory. Tracing shapes, and copying shapes, letters, numerals and words are suggested.

PSYCHOLOGICAL REPORT

STUDENT: Donnie D.
DATE OF BIRTH: 10-15-70
SCHOOL
TEST ADMINISTERED: Wechsler Intelligence Scale for Children--Revised (WISC-R)
EXAMINER:
DATE: 1-10-80

OBSERVATIONS

Donnie was referred for intellectual evaluation to determine his current level of functioning and the most appropriate educational placement. Since he was cooperative and comfortable in the testing situation, rapport was easily established and maintained.

TEST RESULTS:

Full Scale IQ	74
Verbal IQ	80
Performance	72

Verbal	SS	Performance	SS
Information	5	Picture Completion	8
Similarities	4	Picture Arrangement	6
Arithmetic	5	Block Design	5
Vocabulary	8	Object Assembly	2
Comprehension	12	Coding	8

Donnie achieved a Full Scale IQ of 74 which placed him in the borderline category for overall intellectual functioning. His verbal skills were in the dull normal category while his performance skills were in the borderline category. He had a mental age of 6 years and 9 months.

Donnie was above average in social awareness and practical reasoning skills. He displayed a strength, relative to his overall ability, in understanding the meaning of words. His language development is still slightly below the average child his age, however.

Visual alertness for common elements in the environment was a strength relative to his overall limited ability. He also exhibited a strength, relative to overall abilities, in perceptual-motor skills.

Donnie appeared severely deficient in visual part-to-whole organization. He was weak and sporadic in conceptual development. He lacks awareness of classifications and typical ways of grouping information.

RECOMMENDATIONS:

Donnie should be referred to an eligibility staffing committee to determine his eligibility for an exceptional student program. Since his IQ falls within a questionable range, careful consideration should be given to the decision. Further testing for a possible learning disability might be considered prior to the staffing.

Special instruction in conceptual development is suggested. Help him learn to group things by classification and place things into appropriate categories. This should be done orally as much as possible.

Special attention is needed in helping him acquire common knowledge. Training is needed in:

a. Body parts
b. Calendar facts (such as days, months, holidays and seasons)
c. Monetary values

Special help is needed in pre-computational skills and simple arithmetic including:

a. Writing numerals in sequence
b. Matching numerals to the correct number of objects
c. Add single-digit problems when presented visually or orally
d. Subtract single-digit problems when presented visually or orally

Perceptual training emphasizing part-to-whole organization is recommended. Large puzzles and similar perceptual training materials are suggested.

Special attention should be given to training in visual perceptual. Ameliorating activities would include:

a. Parquetry blocks
b. Form boards
c. Geometric drawings
d. Visual discrimination worksheets
e. Spatial relationships worksheets

APPENDIX D
THE SYSTEMS MODEL

GENERAL INFORMATION ON
USING THE SYSTEMS MODEL

Anything enclosed in parentheses is information for user--not to be shown on the report.

Page 1 (Student data as it appears on the format page 1 of 3)

OBSERVATIONS:

(Allow the school psychologist to select from the following statements those that are most appropriate, selecting one from each set.)

(1a) _____ was referred for a comprehensive evaluation to determine if _____ was eligible for an exceptional student program and to determine _____ present level of intellectual functioning.

(1b) _____ was referred for intellectual evaluation to determine _____ current level of functioning and the most appropriate educational placement.

(1c) _____ was referred for a routine reevaluation.

(1d) _____ was referred for a reevaluation at the request of _____ teacher.

(1e) _____ was referred for a reevaluation at the request of _____ parent.

(3a) Since _____ was cooperative and comfortable in the testing situation, rapport was easily established and maintained.

(3b) Rapport was established but difficult to maintain.

(3c) _____ was difficult to work with. Rapport was minimal at best.

(3d) Rapport was established.

(One statement from 1 and 3 will be combined to form the first paragraph. However either or both may be omitted if desired.)
(Any additional observations, or substitute observations should be allowed prior to proceeding.)

TEST RESULTS

(Calculate and print the following: Verbal IQ, Performance IQ, Full Scale IQ and Scaled Scores for up to 10 subtests. If more than 5 subtests are punched in for either the verbal or performance section--use the first 5 of each section. If 4 verbal or performance subtests are punched in--use Appendix E to prorate the sum of that section before calculating the scaled scores or IQs. If less than 4 subtests are punched in--request the missing information (subtests). The usual five subtests of the verbal section are: Information, Similarities, Arithmetic, Vocabulary, and Comprehension. Digit Span is an optional verbal section subtest that may be substituted for any of the five listed. The usual five subtests of the performance section are: Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Coding. Mazes is an optional performance subtest that may be substituted for any of the five listed.)

(Page 2 of the report)

(Three factors are involved in the following paragraph:

1. Calculating the IQs

2. Ranges of the categories

3 Mental age calculations

The IQs are derived from the norm charts. The range of categories follows:

70 to 79	borderline
80 to 89	dull normal
90 to 109	average
110 to 119	bright normal
120 to 129	superior
130 up	very superior

Mental age is calculated using the following steps.

1. Convert chronological age to months.

2. Multiply by the IQ as a percentage of normal (or 100 IQ). Therefore an IQ of 90 would be 90% or .09 and an IQ of 125 would be 125% or 1.25

3. Convert back to years and months.

TEST RESULTS (Continued)

_____ achieved a Full Scale IQ of _____ which placed _____ in the _____ category for overall intellectual functioning. _____ verbal skills were in the _____ category. _____ had a mental age of _____ years and _____ months.

STRENGTHS

(Select the three highest subtests by scaled scores for listing under this section. If the third highest is not tied with the highest but is tied with one or more other scores print both or all--to give a total of two to five statements. If, however, the third is tied with more than two scores drop the third. Use the same procedures for the second. Use from one to five statements in this section within these guidelines.)

(Select from the real strengths for only those subtests selected by the above rules that are at or above a scaled score of 9. If the highest subtests for the student are not 9 or above, select from the relative strengths page of statements. Any time the #2 answers exceed the below criteria use that selection rather than the with or without scatter statements.)

Similarities #2 answers of more than

3 for 6-0 to 7-11 year olds
4 for 8-0 to 9-11 year olds
5 for 10-0 to 11-11 year olds
6 for 12-0 to 13-11 year olds
7 for 14-0 to 16-11 year olds

Vocabulary #2 answers of more than

6 for 6-0 to 7-11 year olds
8 for 8-0 to 9-11 year olds
10 for 10-0 to 11-11 year olds
12 for 12-0 to 13-11 year olds
16 for 14-0 to 16-11 year olds

Comprehension #2 answers of more than

3 for 6-0 to 7-11 year olds
4 for 8-0 to 9-11 year olds
5 for 10-0 to 11-11 year olds
6 for 12-0 to 13-11 year olds
7 for 14-0 to 16-11 year olds

Scatter

(To differentiate between the diagnostic statements in regard to scatter use the following:

Information-- If the difference between the total raw score and the last correct response is 10 or greater choose 'with scatter."

Similarities-- If the difference between the final raw score and 2x the last correct response is greater than the following, choose "with scatter."

6 for 6-0 to 7-11 year old
7 for 8-0 to 11-11 year old
8 for 12-0 to 16-11 year old

Arithmetic-- When difference between last correct response and total raw score is five or more points, select "with scatter' statement.

Vocabulary-- When difference between last correct response x2 and the total raw score is 10 or more, select "with scatter" statement.

Comprehension-- When difference between last correct response x 2 and the total raw score is greater than 10, select "with scatter" statement.

Ignore intra-subtest scatter for all other subtests.)

WEAKNESSES:

(If the Full Scale IQ is below 70 print statements for weaknesses from the real strengths and/or weaknesses pages for all scores at or below a scaled score of 5, unless there are fewer than three scaled scores above 5, in which case follow the general rules below.)

(Select approximately three of the lowest scaled score subtests using the method under strengths to select from 1 to 5 as weaknesses. Select from the real weaknesses for only those subtests that are at or below a scaled score of 8. If the selected lowest subtests are not 8 or below, select the diagnostic statement from the "relative weaknesses.")

(Exception--If the Full Scale IQ is 125 or greater, do not list weaknesses unless they are below a scaled score of 14.)

(Page 3 of report)

RECOMMENDATIONS:

(Give general recommendations first. Select from the statements below.)

(If the Full Scale IQ is 64 or below, PRINT.)

_____ should be referred to an eligibility staffing committee to determine eligibility for an exceptional student program. Other factors besides intellectual deficiencies must be considered. However, _____ is below minus 2 standard deviations from the mean IQ

(If the Full Scale IQ is 65 through and including 75, PRINT.)

_____ should be referred to an eligibility staffing committee to determine eligibility for an exceptional student program. Since _____ IQ falls within a questionable range, careful consideration should be given to the decision. Further testing for a possible learning disability might be considered prior to the staffing

(If the Full Scare IQ is 76 through 119, and there is a difference of 4 or more scaled score points in the subtests, PRINT.)

Further testing is indicated by the scatter of subtest scores Specifically, psychological process testing for possible learning disabilities should be considered.

(If the Full Scale IQ is 76 through 119 without a difference of 4 or more scaled score points, PRINT.)

The flat profile of abilities does not indicate the appropriateness of further psychological process testing. However, if the academic achievement is significantly below the expected level such testing is suggested.

(If the Full Scale IQ is 120 through 124, PRINT)

_____ does not qualify for the gifted program at this time based on these results

(If the Full Scale IQ is 125 through 129, PRINT.)

_____ tested below the range for gifted placement but should be referred to an eligibility staffing committee since _____ was within the standard error of measurement range. Reevaluation with the Stanford-Binet is also suggested.

(If the Full Scale IQ is 130 or above, PRINT.)

_____ qualifies for placement in the gifted program in regards to intellectual functioning. _____ should be referred to an eligibility staffing committee.

_____ individual educational plan should emphasize application, analysis, and synthesis of knowledge as well as the ability to evaluate and make decisions

(Then go to the specific recommendations for ameliorating weaknesses.)

IMPORTANT NOTES!

(All of the recommendations written so far apply to weaknesses of scaled scores 8 or below.)

General Rule.

If the student does not achieve Verbal or Performance IQs of 70 or below the computer should pick up the subtests in recommendation section that correspond to those that were listed in the Weakness section of the report and print the appropriate recommendations

For any scaled scores of 9 or above that are listed as relative weaknesses substitute the following recommendations.

RECOMMENDATIONS

(To be used when relative weaknesses are 9 to 12 scaled scores. Above 12 no recommendations are to be given for relative weaknesses.)

(If relative weakness is in Information, PRINT.)

The relative weakness in incidental learning suggests that _____ needs to have facts stressed. It would help if (he/she) repeated important facts orally in (his/her) own words

(If the relative weakness is in Similarities, PRINT.)

Attention should be given to conceptual development, particularly abstractions.

(If the relative weakness is in Arithmetic, PRINT.)

Since mathematical skills are weak, relative to overall performance, special attention should be given to this area.

(If the relative weakness is in Comprehension, PRINT.)

Special instruction in logical problem solving is recommended to remediate the slight weakness in this area.

(If the relative weakness is in Vocabulary, PRINT.)

The relative weakness in oral language development suggests that attention be given to language development.

(If the relative weakness is in Digit Span, PRINT.)

Some training in auditory memory is recommended to remediate the relative weakness.

(If the relative weakness is in Picture Completion, PRINT.)

Although the weakness in visual alertness is minimal, special attention should be given to correcting the problem since it will effect later learning.

(If the relative weakness is in Picture Arrangement, PRINT.)

Activities in visual sequencing are recommended to ameliorate the relative weakness in this area.

(If the relative weakness is in Block Design, PRINT.)

Visual perception training is suggested. Spatial relationships should be stressed.

(If the relative weakness is in Object Assembly, PRINT.)

Perceptual training emphasizing part-to-whole organization is recommended.

(If the relative weakness is in Coding, PRINT.)

Training in fine motor coordination is recommended.

(If the relative weakness is in Mazes, PRINT.)

Training in eye-hand coordination is recommended.

EXAMPLE

PSYCHOLOGICAL EVALUATION

STUDENT: Tiny Q.
D.O.B.: 7-8-72
DATE OF EXAM: 12-1-79
SEX: Female
SCHOOL: Nonexistent
PARENTS: Mr. and Mrs. F. Q.
TEST ADMINISTERED: Wechsler Intelligence Scale for Children--Revised (WISC-R)
EXAMINER:

OBSERVATIONS

Tiny was referred for a comprehensive evaluation to determine if she was eligible for an exceptional student program and to determine her present level of intellectual functioning. Since she was cooperative and comfortable in the testing situation, rapport was easily established and maintained.

TEST RESULTS:

Full Scale IQ	58
Verbal IQ	70
Performance IQ	55

Verbal	SS	Performance	SS
Information	5	Picture Completion	8
Similarities	4	Picture Arrangement	3
Arithmetic	6	Block Design	2
Vocabulary	7	Object Assembly	1
Digit Span	4	Coding	5

TEST RESULTS (Continued)

Tiny achieved a Full Scale IQ of 59 which placed her in the mentally defective category for overall intellectual functioning. Her verbal skills were in the borderline category while her performance skills were in the mentally defective category. She had a mental age of 4 years and 4 months.

Strengths

Visual alertness for common elements in the environment was a strength, relative to her overall limited ability.

Tiny displayed a strength, relative to her overall ability, in understanding the meaning of words. Her language development is still below the average child of her age, however.

Tiny exhibited a strength, relative to her overall ability, in mathematical foundations such as counting.

Weaknesses

Tiny displayed extremely limited understanding of social relationships. She could not understand the series of events in the simple situations presented.

Tiny exhibited a severe deficiency in visual-motor coordination. She was unable to perceive and reproduce the simplest designs.

Tiny appeared severely deficient in visual part-to-whole organization.

RECOMMENDATIONS:

1. Tiny should be referred to an eligibility staffing committee to determine eligibility for an exceptional student program. Other factors besides intellectual deficiencies must be considered. However, she is below minus 2 standard deviations from the mean IQ.

2. Ameliorating activities in visual sequencing are recommended. Suggested activities would include:

   a. Cut up comic strips to learn the proper sequence of events.

   b. Copy sequences of beads, blocks, etc.

3. Perceptual training emphasizing part-to-whole organization is recommended. Large puzzles and similar perceptual training materials are suggested.

4. Special attention should be given to training in visual perception. Ameliorating activities include

a. Perquetry blocks
b. Form boards
c. Geometric drawings
d. Visual discrimination worksheets
e. Spatial relationships worksheets

Ages 6-0 to 7-11

INFORMATION

If SS is

1-3 no s. _____ has a severe deficiency in general information. This type of knowledge is usually learned incidentally without direct instructions, but it will need to be directly taught for _____ to learn environmental facts.

with scat. _____ acquisition of general information is somewhat sporadic and severely deficient.

4-5 no s. _____ has a deficiency in general information concerning the environment about _____. This type of information is usually learned incidentally. Specific instruction on body parts, counting, and recognizing domestic animals would help ameliorate the deficiency.

with scat. _____ acquisition of general information is somewhat sporadic and deficient. This type of knowledge is learned incidentally but _____ will need special instructions.

6-8 no s. Some weakness was evident in _____ ability to acquire information from the environment in an incidental way. Therefore, specific instructions in general facts such as body parts, domestic animals, counting, and calendar facts are required.

with scat. _____ acquisition of general information tends to be sporadic and is suggestive of possible intellectual imbalances.

9-11 no s. _____ has a normal fund of knowledge about the everyday environment _____ apparently learns facts incidentally without specific instructions.

with scat. _____ has a normal fund of knowledge about the everyday environment. _____ apparently learns facts incidentally without specific instructions. However, intra-subtest scatter suggests possible barriers to incidentally acquiring information from the everyday experiences.

If SS is

12-15 no s.

_____ is above average in _____ fund of general information. Therefore, _____ apparently learns well by listening to facts being discussed.

with scat.

Intra-subtest scatter on the information subtest suggests possible learning difficulties. It could simply be the result of selective attention and/or interest, however.

16-up

_____ has a superior fund of knowledge about the world about _____. _____ Information score would suggest a precocious nature.

Ages 6-0 to 7-11

SIMILARITIES

If SS is	
1-3 no s	_____ had a severe deficiency in concept formation.
with scat.	_____ had a severe deficiency in concept formation.
4-5 no s.	_____ was weak in conceptual development and lacks awareness of classifications and typical ways of grouping information
with scat	_____ wes weak and sporadic in conceptual development. _____ lacks awareness of classifications and typical ways of grouping information
#2 answers	Although _____ conceptual development was weak _____ had some awareness of abstract concepts.
6-8 no s.	_____ exhibited a slight weakness in conceptual development.
with scat.	_____ concept formation lacks uniformity which suggests imbalances in the ability to discriminate between essential and superficial similarities
#2 answers	Although _____ concept formation is weak, some abstract concepts are within _____ repertoire in addition to concrete classifications.
9-11	_____ exhibited normal development in concrete reasoning ability and the skill to discriminate between essential and superficial similarities.
with scat.	_____ exhibited normal development in concrete reasoning abilities and the skill to discriminate between essential and superficial similarities However, lack of uniformity suggested possible learning imbalances

If SS is

#2 answers

_____ exhibited normal development in abstract concept formation, concrete reasoning abilities and the skill to discriminate between essential and superficial similarities.

12-15 no s.

An above average abstract and concrete conceptual development was exhibited. _____ discriminated very well between essential and superficial similarities.

with scat.

An above average conceptual development was exhibited. However, some weaknesses at lower levels suggested possible learning imbalances

#2 answers

An above average abstract and concrete conceptual development was exhibited. _____ discriminated very well between essential and superficial similarities.

---

16 up no s.

_____ exhibited a superior ability in abstract and concrete reasoning. _____ had a high level of discrimination between essential and superficial similarities.

with scat.

_____ exhibited a superior ability in abstract and concrete reasoning. _____ had a high level of discrimination between essential and superficial similarities. Some concepts are very advanced for _____ age.

#2 answers

A very high level of abstract concepts were exhibited. _____ was superior in _____ ability to discriminate between essential and superficial similarities

Ages 6-0 to 7-11

ARITHMETIC

If SS is	
1-3 no s.	_____ was very deficient in pre-arithmetic skills such as counting.
with scat	Some lack of consistency was noted in _____ ability to count and understand pre-arithmetic concepts
4-6 no s	_____ exhibited the ability to count but was deficient in simple computational skills. _____ was deficient in such skills compared to chronological peers
with scat.	_____ exhibited some simple computational skills but lacked consistency in _____ mathematical foundations such as counting. This constituted deficient performance in arithmetic.
6-8 no s.	_____ exhibited the ability to count but was weak in simple addition and subtraction when presented with oral problems.
with scat.	_____ exhibited some simple computational skills but lacked consistency in mathematical foundations such as counting.
9-11 no s.	_____'s numerical reasoning was average for _____ age. _____ was able to apply basic mathematical procedures in personal-social problem solving.
with scat.	_____ exhibited an average ability to use basic arithmetic procedures but showed a weakness in applying these procedures consistently
12-15 no s	_____ displayed a strength in applying mathematical procedures _____ above average skills indicated a solid foundation in utilization of basic arithmetic procedures in personal-social problem solving.

If SS is	
with scat.	_____ exhibited a definite strength in applying mathematical concepts and procedures but displayed some gaps that would suggest _____ be encouraged to recheck work. It appeared _____ had the basic arithmetic skills but tended to make errors.
15 up no s.	_____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.
with scat.	Same statement as above.

Ages 6-0 to 7-11

VOCABULARY

If SS is	
1-3 no s.	_____ had an extremely limited receptive and/or expressive vocabulary. _____ understanding of the meaning of words was comparable to the normal 2 to 4 year old.
with scat.	_____ had a deficient verbal ability. _____ verbal fluency was comparable to the normal child of 2 to 4 but there was more variability with some of the words above those commonly understood at that level.
4-5 no s.	_____ was deficient in oral vocabulary _____ had a definite weakness in understanding the meaning of words in common usage among other children _____ age
with scat.	_____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicated a weakness in oral vocabulary
6-8 no s	A slight weakness was noted in _____ understanding of the meaning of commonly used words
with scat.	A slight weakness was noted in oral language development with a lack of uniformity in the development. _____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ vocabulary.
9-11 no s.	_____ exhibited a normal language development with an understanding of the meaning of words comparable to others of the same age.
with scat.	_____ exhibited a normal language with slightly more variability than other children _____ age.
12-15 no s.	Mature language development was displayed. _____ understood the meaning of more words than many children of _____ age and expressed this strength fluently.

If SS is

with scat.	_____ fund of verbal information was well above normal but some gaps were noted at lower levels of language development.
16-up no s.	Precocious language development was displayed. _____ had a superior fund of verbal information and gave high quality definitions for words.
with scat.	Same.

Ages 6-0 to 7-11

COMPREHENSION

If SS is	
1-3 no s	_____ exhibited a severe deficiency in practical reasoning skills. _____ lacked an awareness of social expectations and social norms.
with scat.	Deficiencies were evident in _____ social awareness and practical reasoning skills. _____ seemed unaware of social expectancies at the most basic level.
4-5 no s	Deficiencies were displayed in social awareness and practical reasoning. _____ seemed unaware of social expectations and personal responsibility in problem situation.
with scat.	Sporadic responses indicated uneven social awareness and weak practical reasoning skills. _____ seemed unaware of social expectations and personal responsibility in problem situation.
6-8 no s	_____ was weak in situational, or social problem solving skills. There appeared to be an inadequate understanding of social expectations and personal responsibility in problem situations.
with scat	Sporadic responses indicated uneven social awareness and inadequate practical reasoning skills. There appeared to be an inadequate understanding of social expectation and personal responsibility in problem situations.
9-11 no s	_____'s comprehension of social norms and practical reasoning skills were in the normal range compared with most students in the age bracket.
with scat	_____'s comprehension of social norms and practical reasoning skills were in the normal range compared with most students in the age bracket. However, some gaps at lower levels suggested possible learning disabilities.

If SS is	
12-15 no s	_____ was above average in social awareness and practical reasoning skills.
with scat.	_____ was above average in social awareness and practical reasoning skills. However, some gaps at lower levels suggested possible learning imbalances.
16 up no s	_____ was superior in _____ social awareness and understanding of personal responsibility and social expectations.
with scat.	Same as above.

Ages 6-0 to 7-11

DIGIT SPAN

If SS is	
1-3	Extremely limited auditory memory was exhibited.
4-6	_____ had a very limited auditory memory _____ attention span for auditory information is in need of special training.
6-8	_____ displayed a weakness in short-term auditory memory and auditory attention span for digits.
9-11	_____'s auditory attention span was normal for _____ age. _____ was able to retain and repeat auditory information.
12-15	_____ displayed a good auditory attention span _____ was able to recall orally presented data better than other children _____ age.
16-up	_____ exhibited a superior auditory memory. _____ was well above other children of _____ age in recalling and repeating orally presented data

(If difference in forward and backward Digit Span is more than three raw score points, use the following statements in place of the above)

1-3	_____ had a very limited auditory memory. _____ attention span for auditory information is in need of special training.
6-8	_____ displayed an adequate auditory memory only as long as no manipulation of the information was necessary. This indicated a lack of flexibility of thought processes.

If SS is

9-11 _____'s auditory memory was normal but lacked flexibility. _____ was weak in manipulating information received orally

---

12-15 _____ was able to recall orally presented information better than others in the age bracket. However, _____ lacked flexibility in manipulating such information.

---

16 up _____ exhibited a superior auditory memory. _____ was well above other children of _____ age in recalling and repeating orally presented data.

Ages 6-0 to 7-11

PICTURE COMPLETION

If SS is	
1-3 no s	_____ appeared severely deficient in visual alertness.
with scat.	_____ appeared severely deficient in visual alertness.
4-5 no s	_____ exhibited deficient visual alertness and visual memory for common aspects in the environment.
with scat	_____ exhibited deficient visual alertness and the inability to revisualize common objects with all of their details.
6-8 no s.	A weakness was exhibited in visual alertness and the ability to revisualize common objects with all of their details.
with scat.	_____ had a weak and sporadic visual awareness. This would interfere with visual discrimination of words.
9-11 no s.	_____ exhibited normal visual alertness and long-term visual memory. This means _____ can revisualize common objects with all of their details.
with scat.	_____ exhibited normal but sporadic visual alertness and long-term visual memory. This means _____ can revisualize common objects with most of their details.
12-15	_____ was above average in visual alertness and long-term visual memory. This means _____ can revisualize common objects with all of their details.
with scat.	Same.

If SS is

16 up
no s.

_____ was able to revisualize common objects with all of their details which indicated superior visual alertness.

with
scat

Same

Ages 6-0 to 7-11

PICTURE ARRANGEMENT

If SS is

1-3 no s: _____ displayed extremely limited understanding of social relationships. _____ could not understand the series of events in the simple situations presented.

4-5 no s: _____ displayed a very limited understanding of social relationships and the logical sequence of events. _____ had poor visual sequencing skills.

6-8 no s: _____ displayed weak visual sequencing skills and limited comprehension of total situation in social relationships.

with scat: _____ displayed difficulty in understanding visual sequencing tasks. _____ was inconsistent in grasping the total situation in social relationships.

9-11 no s: _____ displayed typical skills in understanding social relationships and visual sequencing tasks. _____ ability to grasp the total situation when it was presented visually was normal for _____ age group.

with scat: _____ displayed typical skills in understanding social relationships and visual sequencing tasks. However, some unevenness in this ability was noted. _____ ability to grasp the total situation when it was presented visually was normal for _____ age group.

12-15 no s: _____ displayed above average ability in understanding social relationships. _____ ability to grasp the total situation from visually presented information was above normal.

---

16 up. no s: _____ displayed superior skills in understanding social relationships and total situations from visually presented information.

with scat: Same

Ages 6-0 to 7-11

BLOCK DESIGN

If SS is

1-3 _____ exhibited a severe deficiency in visual-motor coordination. _____ was unable to perceive and reproduce the simplest designs.

4-5 _____ exhibited deficient visual-motor coordination. _____ had difficulty reproducing the presented block designs.

6-8 _____ exhibited a weakness in visual-motor coordination. _____ had difficulty perceiving and reproducing those designs commonly formed by other children in _____ age group.

9-11 _____'s ability to perceive, analyze, synthesize and reproduce abstract designs was typical of children _____ age. This indicates average non-verbal concept formation.

12-15 _____ was above average in non-verbal concept formation. _____ was able to perceive, analyze, synthesize and reproduce abstract designs better than many children _____ age.

16-up _____ was superior in non-verbal concept formation and visual organization. _____ was able to perceive, analyze, synthesize and reproduce abstract designs comparable to most children four or more years older.

Ages 6-0 to 7-11

OBJECT ASSEMBLY

If SS is	
1-3	_____ appeared severely deficient in visual part-to-whole organization
4-5	_____ exhibited a very limited ability to recognize visual patterns and to assemble parts into meaningful wholes
6-8	_____ exhibited weakness in perceptual organization, particularly in the ability to recognize visual patterns and organize the parts into meaningful wholes.
9-11	_____ exhibited normal perceptual organization, particularly the ability to recognize visual patterns and organize parts to create meaningful wholes
12-15	_____ exhibited better than average perceptual organization. A strong ability was noted in _____ ability to recognize visual patterns and organize the parts into meaningful wholes.
16 up	_____ exhibited superior skills in perceptual organization _____ ability to recognize visual patterns and synthesize parts into meaningful wholes was well above the average for others _____ age

Ages 6-0 to 7-11

CODING

If SS is	
1-3	_____ was seriously deficient in perceptual-motor ability
4-5	_____ was deficient in perceptual-motor skills _____ eye-hand coordination needs specific attention with ameliorating activities.
6-8	_____ exhibited a weakness in perceptual-motor speed. Eye-hand coordination requires specific training
9-11	_____ displayed normal ability in perceptual-motor skills for a child _____ age.
12-15	Above average ability in perceptual-motor skills was displayed. Short-term visual memory helped increase _____ speed.
16-up	_____ is a fast, efficient worker on perceptual-motor tasks. _____ strength in short-term visual memory supports this superior performance.

Ages 50 to 7-11

MAZES

If SS is	
1-3	_____ showed a severe deficiency in eye-hand coordination.
4-5	_____ showed a deficiency in eye-hand coordination
6-8	Some weakness was evident in _____'s eye-hand coordination and the ability to plan ahead
9-11	_____ was average in the ability to plan and carry out perceptual-motor activities.
12-15	_____ was above average in the ability to plan and carry out perceptual-motor activities.
15 up	_____ exhibited superior skills in planning and executing perceptual-motor activities.

Ages 6-0 to 7-11

INFORMATION

(as a relative strength)

If SS is	
2-3	_____ exhibited a strength, relative to _____ overall very limited abilities, in general information.
4-5	_____ exhibited a strength, relative to _____ limited overall activities, in general information.
6-8	_____ exhibited a strength, relative to _____ overall abilities, in general information
9-11	Relative to _____ overall ability, _____ displayed a strength in general information. This indicates a normal ability to learn from and about the everyday environment.

(as a relative weakness)

9-11	_____ displayed a weakness, relative to _____ overall above average ability in general knowledge about the environment. In this area _____ is comparable to other children _____ age, however.
12-15	_____ displayed a weakness, relative to _____ overall ability, in general information. In this area _____ is above average for _____ age, however.

Ages 6-0 to 7-11

SIMILARITIES

(as a relative strength)

If SS is	
2-3	_____ exhibited a strength, relative to _____ overall very limited ability, in concept formation and typical ways of grouping information.
4-5	_____ exhibited a strength, relative to _____ overall very limited ability, on concept formation and typical ways of grouping information.
6-8	_____ exhibited a strength, relative to _____ overall limited ability in concept formation and in understanding how two things are related.
9-11	_____ exhibited a strength, relative to _____ overall ability, in concept formation. _____ conceptual development is normal for children _____ age which indicates the ability to discriminate between essential and superficial similarities

(as a relative weakness)

9-11	_____ displayed a weakness, relative to _____ above average overall abilities, in conceptual development _____ ability to discriminate between essential and superficial similarities are comparable to other students of this age group, however.
12-15	Relative to _____ overall superior ability, a slight weakness was noted in abstract concept formation. _____ remains above average in this area nevertheless.

Ages 6-0 to 7-11

ARITHMETIC

(as a relative strength)

If SS is

2-3 _____ had a strength, relative to _____ overall very limited ability, in mathematical foundations such as counting

---

4-5 _____ exhibited a strength, relative to _____ overall very limited ability in mathematical foundations such as counting. Although this represents below average ability for others _____ age it is above _____ average score

---

6-8 _____ exhibited a strength, relative to _____ overall ability, in mathematical foundations such as counting.

9-11 _____'s numerical reasoning was average for _____ age. This indicated a strength compared to _____ average performance

---

(as a relative weakness)

9-11 _____'s numerical reasoning was average for _____ age _____ was able to apply basic mathematical procedures in personal-social problem solving. Although this was average for _____ age level, it represented a weakness, relative to _____ generally high ability.

12-15 _____ exhibited a weakness in arithmetic, compared to _____ overall superior abilities. This is not uncommon since children do not usually study math that has not been presented as they will need and increase their verbal skills.

Ages 6-0 to 7-11

VOCABULARY

(as a relative strength)

If SS is

2-3 _____ displayed a strength, relative to _____ overall very limited ability, in understanding the meaning of words.

4-5 _____ displayed a strength, relative to _____ overall very limited ability, in understanding the meaning of words.

6-8 _____ displayed a strength, relative to _____ overall ability, in understanding the meaning of words. _____ language development is still below the average child of _____ age, however.

9-11 _____ displayed a normal language development with an understanding of the meaning of words comparable to other children _____ age. This represented a strength, relative to _____ overall ability.

(as a relative weakness)

9-11 _____ displayed a normal language development with an understanding of the meaning of words comparable to other children _____ age. This represented a weakness, relative to _____ overall ability

---

12-15 Mature language development was displayed. However, _____ verbal skills were below _____ general superior ability

Age 6-0 to 7-11

COMPREHENSION

(as a relative strength)

If SS is	
2-3	_____'s strength, relative to _____ overall defective ability, was in practical reasoning skills.
4-5	_____'s strength, relative to _____ overall defective ability, was in practical reasoning skills.
6-8	_____'s strength, relative to _____ overall ability, was in practical reasoning skills and social awareness.
9-11	_____'s comprehension of social norms and practical reasoning skills were in the normal range which represented a strength compared to _____ other abilities.

(as a relative weakness)

9-11	_____'s comprehension of social norms and practical reasoning skills were in the normal range which represented a weakness compared to _____ other abilities.
12-15	Although _____ was above average in social awareness and practical reasoning skills, this area represented a weakness compared to _____ overall superior performance

Ages 6-0 to 7-11

DIGIT SPAN

(as a relative strength)

If SS is	
2-3	_____ showed a strength in auditory attention span and memory, relative to _____ other extremely limited abilities.
4-5	_____ exhibited a strength in auditory attention span and memory, relative to _____ other extremely limited abilities.
6-8	_____ exhibited a strength in auditory attention span and memory, relative to _____ other limited abilities.
9-11	_____'s auditory attention span and memory was normal for _____ age. This represented a strength compared to _____ other abilities

(as a relative weakness)

3-11	_____'s auditory attention span and memory was normal for _____ age. This represented a weakness compared to _____ other abilities.
9-11	_____'s auditory attention span and memory was normal for _____ age. This represented a weakness compared to _____ other abilities.
12-15	_____'s auditory attention span and auditory memory was above average for _____ age. However, this was a weakness compared to _____ above average abilities.

Ages 6-0 to 7-11

PICTURE COMPLETION

(as a relative strength)

If SS is

2-3 Visual alertness was shown to be a strength for _____ relative to _____ overall defective functioning.

4-5 Visual alertness for common elements in the environment indicated a strength for _____ relative to _____ overall defective functioning.

6-8 Visual alertness for common elements in the environment was a strength, relative to _____ overall limited ability.

9-11 _____ exhibited normal visual alertness which meant _____ could revisualize common objects with all of their essential details. This represented a strength, relative to _____ other abilities.

(as a relative weakness)

9-11 _____ exhibited normal visual alertness which meant _____ could revisualize common objects with all of their essential details. This represented a weakness, relative to _____ other abilities.

12-15 _____ exhibited above average visual alertness which meant _____ could revisualize common objects with all of their essential details. This represented a weakness, relative to _____ other abilities.

Ages 6-0 to 7-11

PICTURE ARRANGEMENT

(as a relative strength)

If SS is

2-3 _____ displayed a very limited understanding of social relationships which represented a strength, relative to _____ other very limited abilities.

4-5 _____ displayed a limited understanding of social relationships which represented a strength, relative to _____ other very limited abilities.

6-8 _____ displayed some visual sequencing skills and limited comprehension of a total situation which represented strengths compared to _____ other limited abilities

---

9-11 _____'s ability to grasp the total situation and sequence when it was presented visually was average for _____ age. This represented a strength relative to _____ overall ability.

(as a relative weakness)

9-11 _____'s ability to grasp the total situation and sequence of events when it was presented visually was average for _____ age. However, this was a weakness relative to _____ other abilities.

12-15 _____ displayed above average ability in grasping the total situation and sequence of events when it was presented visually. However, this was a weakness compared to _____ other skills.

Ages 6-0 to 7-11

BLOCK DESIGN

(as a relative strength)

If SS is

2-3 _____'s strength, relative to _____ overall very limited ability, was in visual-motor organization.

4-5 _____'s strength, relative to _____ overall limited ability, was in visual-motor organization.

6-8 _____'s strength, relative to _____ overall ability, was in visual-motor organization involving spatial relationships.

9-11 _____'s ability to perceive, analyze, synthesize and reproduce abstract designs was typical of children _____ age. This represented a strength relative to _____ overall ability.

(as a relative weakness)

9-11 _____'s ability to perceive, analyze, synthesize, and reproduce abstract designs was typical of children _____ age. This represented a weakness relative to _____ other abilities

---

12-15 _____ was above average in non-verbal concept formation _____ was able to perceive, analyze, synthesize, and reproduce abstract designs better than many children _____ age. However, this represented a weakness compared to _____ other abilities

Ages 6-0 to 7-11

OBJECT ASSEMBLY

(as a relative strength)

If SS is

2-3 _____'s strength, relative to _____ overall defective abilities, was in _____ limited ability in visual perception.

4-5 _____'s strength, relative to _____ overall defective abilities, was in _____ limited ability to recognize patterns and to assemble parts into meaningful wholes.

6-8 _____'s strength, relative to _____ overall ability, was in perceptual organization, particularly in the ability to recognize patterns and to assemble parts into meaningful wholes.

9-11 _____ exhibited normal perceptual organization, particularly the ability to recognize patterns and organize the parts into meaningful wholes. This represents a strength compared to _____ other abilities

---

(as a relative weakness)

9-11 _____ exhibited normal perceptual organization, particularly the ability to recognize patterns and organize the parts into meaningful wholes. This represented a weakness compared to_____ other abilities.

12-15 _____ exhibited above average perceptual organization, particularly the ability to recognize patterns and organize the parts into meaningful wholes. However, this represented a weakness compared to _____ other skills.

Ages 6-0 to 7-11

MAZES

(as a relative strength)

If SS is

2-3 _____ showed some strength, relative to _____ overall very limited ability, in eye-hand coordination.

6-8 _____ showed a strength, relative to _____ overall ability, in eye-hand coordination and the ability to plan ahead.

9-11 _____ was average in the ability to plan and carry out perceptual-motor activities. This represents a strength compared with _____ other abilities

---

(as a relative weakness)

9-11 _____ was average in the ability to plan and carry out perceptual-motor activities. This represents a weakness compared with _____ average abilities.

12-15 _____ showed a weakness, compared with _____ overall superior skills in the ability to plan and carry out perceptual-motor activities.

Ages 6-0 to 7-11

RECOMMENDATIONS

If the Verbal IQ is 70 or less and no scaled score is above 6 PRINT #1 - #5

1. An appropriate educational plan for _____ would include ameliorating strategies in oral language development, auditory memory, auditory association and pre-computational skills.

2. Suggested activities in auditory memory would include

   a. Repeating digits forward and reversed
   b. Repeating simple sentences verbatim
   c. Repeating groups of unrelated words of gradually increasing length
   d. Listening for main points of a story

3. Suggested activities in auditory decoding would include

   a. Auditory discrimination drills (e.g., cat-set, hat-hot)
   b. Auditory association drills (e.g., table-chair, paper-pencil)
   c. Recognizing similarities and differences
   d. Recognizing logical and/or absurd statements
   e. Phonics training

4. Oral language development should stress both receptive and expressive vocabulary. The Peabody Language Development Kit, Distar Language Program or similar programs are suggested as possible resources for language development. Show and tell is sometimes used to stimulate expressive skills.

5. Ameliorating activities in pre-computational skills include

   a. Counting objects
   b. Recognizing numerals
   c. Matching numerals to the correct number of objects
   d. Writing numerals

If the conditions above are not met, pick up the 2, or if necessary, 3 lowest subtest scores

RECOMMENDATIONS--Continued

If one of the lowest Verbal scores is in Information PRINT

1. Special attention is needed in helping _____ acquire common knowledge. Training is needed in

   a. Body parts
   b. Calendar facts (such as days, months, holidays and seasons)
   c. Monetary values

If one is in Similarities PRINT

1. Special instruction in conceptual development is suggested. Help _____ learn to group things by classification and place things into appropriate categories. This should be done orally as much as possible.

If one is in Arithmetic, PRINT

1. Special help is needed in pre-computational skills and simple arithmetic, including

   a. Counting objects
   b. Recognizing numerals
   c. Writing numerals in sequence
   d. Matching numerals to the correct number of objects
   e. Add single-digit problems when presented visually or orally
   f. Subtract single-digit problems when presented visually or orally

If one is in Comprehension, PRINT

1. Special instruction in logical problem solving is suggested. Teach what and why facts such as

   a. What do we live in, cook on, sleep on, etc.
   b. What do we do about special needs or problems
   c. Why do we have teachers, police, doctors, etc
   d. Why do we behave in particular ways

If one is in Digit Span, PRINT

1. Ameliorating activities in auditory memory would include

   a. Repeating digits forward and reversed
   b. Repeating simple sentences verbatim
   c. Repeating groups of unrelated words of gradually increasing length
   d. Listening for main points of a story

If one is in Vocabulary, PRINT

Oral language development should stress both receptive and expressive vocabulary. The Peabody Language Development Kit, Distar Language Program or similar program are suggested as possible resources for language development Show and tell is sometimes used to stimulate expressive skills

RECOMMENDATIONS

If the Performance IQ is 70 or less and no scaled score is above 6 PRINT #1 - #5 (omitting #).

1. An appropriate educational plan for _____ would include ameliorating strategies in visual perception, visual memory, sequencing and psychomotor coordination

2. Suggested activities in visual perceptuion would include

   a. Visual tracking exercises
   b. Form boards
   c. Puzzles
   d. Parquetry blocks
   e. Visual discrimination worksheets
   f. Finding shapes in pictures
   g. Missing parts charts or worksheets
   h. Bead designs
   i. Matching colors
   j. Matching shapes
   k. Visual absurdities worksheets

3. Ameliorating activities in visual memory would include

   a. Missing parts charts or worksheets
   b. Recalling a sequence of events shortly after watching the action
   c. Play "What is Missing Game"
   d. Visual memory drills

4. Visual sequencing activities might include

   a. Cut up comic strips to learn sequences of events
   b. Copy sequences of beads, blocks, etc.

5. Ameliorating activities in psychomotor coordination would include

   a. Throwing a beanbag into a box or through a large hole
   b. Stringing beads
   c. Using templates for drawing simple shapes
   d. Tracing over large numerals and/or letters
   e. Coloring between lines
   f. Drawing a line between two other lines
   g. Geometric drawings
   h. Puzzles
   i. Palmer cursive writing drills
   j. Motor speed activities
   k. Visual tracking activities

l. Balance beam walking
m. Hopping, skipping and jumping

If one of the lowest subtests is Picture Completion PRINT

Special attention should be given to strengthening visual alertness. Have the child find shapes or colors in a picture. Missing parts charts or worksheet are also recommended

If one of the lowest subtests is Picture Arrangement PRINT

Ameliorating activities in visual sequencing are recommended Suggested activities would include

a. Cut up comic strips to learn the proper sequence of events
b. Copy sequences of beads, blocks, etc.

If one of the lowest subtests is Block Design PRINT

Special attention should be given to training in visual perception Ameliorating activities would include

a Parquetry blocks
b Form boards
c Geometric drawings
d. Visual discrimination worksheets
e. Spatial relationships worksheets

If one of the lowest subtests is Object Assembly PRINT

Perceptual training emphasizing part-to-whole organization is recommended. Large puzzles and similar perceptual trainings materials are suggested.

If one of the lowest subtests is Coding PRINT

Training is needed in psycho-motor tasks. Special attention needs to be given to fine motor coordination, motor speed and visual memory. Tracing shapes and copying shapes, letters, numerals and words are suggested

If one of the lowest subtests is Mazes PRINT

Special attention needs to be given to eye-hand coordination. Templates are suggested for ameliorating the weakness in this area. Coloring is a good activity if staying within lines is stressed.

Ages 8-0 to 9-11

Most of the analytical statements in the 6-0 to 7-11 section are acceptable for the 8-0 to 9-11 age group. Exceptions to this are Information, Arithmetic, and Vocabulary. The new set of analytical statements for these subtests are on the next pages. Recommendations are modified at most age levels and follow the three new pages.

Ages 8-0 to 9-11

INFORMATION

If SS is	
1-3 no s.	_____ has a severe deficiency in general information. This type of knowledge is usually learned incidentally without direct instructions, but it will need to be directly taught for _____ to learn environmental facts.
with scat.	_____ acquisition of general information is somewhat sporadic and severely deficient
4-5 no s.	_____ has a deficiency in general information concerning the environment about _____. This type of information is usually learned incidentally.
with scat.	_____ acquisition of general information is somewhat sporadic and deficient. This type of knowledge is learned incidentally but _____ will need special instructions.
6-8 no s.	Some weakness was evident in _____ ability to acquire information from the environment in an incidental way.
with scat.	_____ acquisition of general information tends to be sporadic and is suggestive of possible intellectual imbalances.
9-11 no s.	_____ has a normal fund of knowledge about the everyday environment. _____ apparently learns facts incidentally without specific instructions.
with scat.	_____ has a normal fund of knowledge about the everyday environment. However, intra-subtest scatter suggests possible barriers to incidentally acquiring information from the everyday experiences.
12-15 no s.	_____ is above average in _____ fund of general information. Therefore, _____ apparently learns well by listening to facts being discussed.

If SS is

with scat. Intra-subtest scatter on the information subtest suggests possible learning difficulties. It could be the result of selective attention and/or interest, however

---

16 up no s _____ has a superior fund of knowledge about the world about _____ _____ information score would suggest a precocious nature.

with scat. _____ has a superior fund of knowledge about the world about _____ _____ information score would suggest a precocious nature.

Ages 8-0 to 8-11

ARITHMETIC

If SS is	
1-3 no s.	_____ was very deficient in pre-arithmetic skills such as counting.
with scat.	Some lack of consistency was noted in _____ ability to count and understand pre-arithmetic concepts
4-5 no s.	_____ exhibited the ability to count but was weak in simple computational skills. _____ is deficient in such skills compared to chronological peers.
with scat	_____ exhibited some simple computational skills but lacks consistency in _____ mathematical foundations such as counting. This constitutes deficient performance in arithmetic.
6-8 no s.	_____ was weak in simple addition and subtraction when presented with oral problems.
with scat.	_____ exhibited some simple computational skills but lacks consistency in _____ mathematical foundations such as counting.
9-11 no s.	_____'s numerical reasoning is average for _____ age. _____ is able to apply basic mathematical procedures in personal-social problem solving.
with scat.	_____ exhibited an average ability to use basic arithmatic procedures but showed some inconsistency in applying these procedures.
12-15 no s.	_____ displayed a strength in applying mathetical procedures. _____ above average skills indicated a solid foundation in utilization of basic arithmetic procedures in personal-social problem solving.

If SS is

with scat	_____ exhibited a definite strength in applying mathematical concepts and procedures but displayed some gaps that would suggest _____ be encouraged to recheck work. It appeared _____ had the basic arithmetic skills but tended to make errors.

---

16 up no s.	_____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.
with scat	_____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.

Ages 8-0 to 9-11

VOCABULARY

If SS is	
1-3 no s.	_____ had an extremely limited receptive and/or expressive vocabulary. _____ understanding of the meaning of words is comparable to the normal five to six year old.
with scat.	_____ had a deficient verbal ability. _____ verbal fluency is comparable to the normal child of five to six but there is more variability with some of the words above those commonly understood at that level.
4-5 no s.	_____ was deficient in oral vocabulary. _____ had a definite weakness in understanding the meaning of words in common usage among other children _____ age.
with scat.	_____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicated a weakness in oral vocabulary.
6-8 no s.	A slight weakness was noted in _____ understanding of the meaning of commonly used words.
with scat.	A slight weakness was exhibited in oral language development with lack of uniformity in the development. _____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ vocabulary.
9-11 no s.	_____ exhibited a normal language development with an understanding of the meaning of words comparable to others of the same age.
with scat	_____ exhibited normal language development with slightly more variability than other children _____ age
12-15 no s.	Mature language development was displayed. _____ understood the meaning of more words than many children of _____ age and expressed this strength fluently.

If SS is

with scat	_____ fund of verbal information is well above normal but some gaps were noted at lower levels of language development.

---

16 up no s.	Precocious language development was displayed. _____ has a superior fund of verbal information and gives high quality definitions for words.
with scat,	Precocious language development was displayed. _____ has a superior fund of verbal information and gives high quality definitions for words

Ages 8-0 to 9-11

RECOMMENDATIONS

If the Verbal IQ is 70 or less and no scaled score is above 6 PRINT #1 - #5

1 An appropriate education plan for _____ would include ameliorating strategies in oral language development, auditory memory, auditory association and arithmetic skills.

2. Suggested activities in auditory memory would include

a Repeating digits forward and reversed
b. Repeating simple sentences verbatim
c Repeating groups of unrelated words of gradually increasing length
d. Listening for main points of a story

3 Suggested activities in auditory decoding would include

a. Auditory discrimination drills (e.g., cat-sat, hat-hot)
b. Auditory association drills (e.g., table-chair, paper-pencil)
c Recognizing similarities and differences
d Recognizing logical and/or absurd statements
e Phonics training

4. Oral language development should stress both receptive and expressive vocabulary The Peabody Language Development Kit, Distar Language Program or similar programs are suggested as possible resources for language development.

5 Ameliorating activities in arithmetic might include

a. Writing numerals in sequence
b. Single-digit addition and subtraction
c. Multidigit addition and subtraction without regrauping

If the conditions above are not met, pick up the two, or if necessary, three lowest subtest scores

RECOMMENDATIONS--Continued

If one of the lowest Verbal scores is in Information, PRINT

1. Special attention is needed in helping _____ acquire common knowledge. Training is needed in

   a. Calendar facts (such as days, months, holidays, and seasons)
   b. Monetary values

If one is in Similarities, PRINT

1. Special instruction in conceptual development is suggested. Help _____ learn to group things by classification and place things into appropriate categories. This should be done orally as much as possible.

If one is in Arithmetic, PRINT

1. Special help is needed in _____ computational skills including

   a. Writing numerals in sequence to 1,000
   b. Matching numerals to the correct number of objects
   c. Add single-digit problems when presented visually or orally
   d. Subtract single-digit problems when presented visually or orally

If one is in Comprehension, PRINT

1. Special instruction in logical problem solving is suggested. Teach what and why facts such as

   a. What do we live in, cook on, sleep on, etc.
   b. What do we do about special needs or problems
   c. Why do we have teachers, police, doctors, etc.
   d. Why do we behave in particular ways

If one is in Digit Span, PRINT

1. Ameliorating activities in auditory memory would include

   a. Repeating digits forward and reversed
   b. Repeating simple sentences verbatim
   c. Repeating groups of unrelated words of gradually increasing length
   d. Listening for main points of a story

RECOMMENDATIONS--Continued

If one is in Vocabulary, PRINT

Oral language development should stress both receptive and expressive vocabulary. The Peabody Language Development Kit, Distar Language Program or similar programs are suggested as possible resources for language development.

If the Performance IQ is 70 or less and no scaled score is above 6, PRINT #1 - 5 (omitting #)

1. An appropriate educational plan for _____ would include ameliorating strategies in visual perception, visual memory, sequencing and psychomotor coordination.

2. Suggested activities in visual perception would include

   a. Puzzles
   b. Parquetry blocks
   c. Visual discrimination worksheets
   d. Finding shapes in pictures
   e. Missing parts charts or worksheets
   f. Bead designs
   g. Visual absurdities worksheets

3. Ameliorating activities in visual memory would include

   a. Missing parts charts or worksheets
   b. Recalling a sequence of events shortly after watching the action
   c. Play "What Is Missing Game"
   d. Visual memory drills

4. Visual sequencing activities might include

   a. Cut up comic strips to learn sequence of events
   b. Copy sequences of beads, blocks, etc.

5. Ameliorating activities in psychomotor coordination would include

   a. Geometric drawings
   b. Puzzles
   c. Cursive writing drills (using circles, slanted lines, etc.)
   d. Motor speed activities
   e. Visual tracking activities
   f. Balance beam walking

If one of the lowest subtests is Picture Completion, PRINT

Special attention should be given to strengthening visual alertness. Have the child find shapes or colors in a picture. Missing parts charts or worksheet are also recommended.

If one of the lowest subtests is Picture Arrangement, PRINT

Ameliorating activities in visual sequencing are recommended. Suggested activities would include

a. Cut up comic strips to learn the proper sequence of events
b. Copy sequences of beads, blocks, etc

If one of the lowest subtests is Block Design, PRINT

Special attention should be given to training in visual perception. Ameliorating activities would include

a. Parquetry blocks
b. Form boards
c. Geometric drawings
d. Visual discrimination worksheets
e. Spatial relationships worksheets

If one of the lowest subtests is Object Assembly, PRINT

Perceptual training emphasizing part-to-whole organization is recommended. Large puzzles and similar perceptual training materials are suggested.

If one of the lowest subtests is Coding, PRINT

Training is needed in psycho motor tasks. Special attention needs to be given to fine motor coordination, motor speed and visual memory. Tracing shapes and copying shapes, letters, numerals and words are suggested

If one of the lowest subtests is Mazes, PRINT

Special attention needs to be given to eye-hand coordination Templates are suggested for ameliorating the weakness in this area. Coloring is a good activity if staying within lines is stressed.

Ages 10-0 to 11-11

Most of the analytical statements in the 6-0 to 7-11 section are acceptable for the 10-0 to 11-11 age group. Exceptions to this are Information, Arithmetic, Vocabulary, Picture Completion, Mazes, Arithmetic (relativity branch), Mazes (relativity branch), and recommendations. The new set of analytical statements for these subtests are on the following pages, except for Information which is the same as for ages 8-0 to 9-11.

Ages 10-0 to 11-11

ARITHMETIC

If SS is

1-3 no s.
_____ was very deficient in arithmetic skills such as simple addition and subtraction.

with scat.
Some lack of consistency was noted in _____ ability to understand simple arithmetic concepts.

4-5 no s.
_____ exhibited the ability to add and subtract single-digit problems but was weak in computational skills. _____ is deficient in such skills compared to chronological peers.

with scat.
_____ exhibited some simple computational skills but lacks consistency in _____ mathematical foundations such as assition and subtraction. This constitutes deficient performances in arithmetic.

6-8 no s.
_____ was weak in subtraction and multiplication when presented with oral problems.

with scat.
_____ exhibited some computational skills but lacks consistency in _____ mathematical foundations.

9-11 no s.
_____'s numerical reasoning is average for _____ age _____ is able to apply basic mathematical procedures in personal-social problem solving.

with scat.
_____ exhibited an average ability to use basic arithmetic procedures but showed some inconsistency in applying these procedures

---

12-15 no s.
_____ displayed a strength in applying mathematical procedures _____ above average skills indicated a solid foundation in utilization of basic arithmetic procedures in personal-social problem solving.

If SS is

with scat. _____ exhibited a definite strength in applying mathematical concepts and procedures but displayed some gaps that would suggest _____ be encouraged to recheck work. It appeared _____ had the basic arithmetic skills but tended to make errors.

---

16 up no s. _____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.

with scat. _____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.

Ages 10-0 to 11-11

VOCABULARY

If SS is

1-3 no s
_____ had an extremely limited receptive and/or expressive vocabulary. _____ understanding of the meaning of words is comparable to the normal six to seven year olds.

with scat.
_____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicates a weakness in oral vocabulary.

4-5 no s.
_____ was deficient in oral vocabulary. _____ had a definite weakness in understanding the meaning of words in common usage among other children _____ age.

with scat.
_____ understanding of the meaning of words was sporadic such that more commonly used words were not wtihin _____ receptive vocabulary. This indicates a weakness in oral vocabulary.

6-8 no s.
A slight weakness was noted in _____ understanding of the meaning of commonly used words.

with scat.
A slight weakness was exhibited in oral language development with lack of uniformity in the development. _____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ vocabulary.

9-11 no s.
_____ exhibited a normal language development with an understanding of the meaning of words comparable to others of the same age.

with scat.
_____ exhibited normal language development with slightly more variability than other children _____ age.

12-15 no s.
Mature language development was displayed. _____ understood the meaning of more words than many children of _____ age and expressed this strength fluently

with scat.	_____ fund of verbal information is well above normal but some gaps were noted at lower levels of language development.
16 up no s	Precocious language development was displayed. _____ has a superior fund of verbal information and gives high quality definitions for words.
with scat.	Precocious language development was displayed. _____ has a superior fund of verbal information and gives high quality definitions for words

Ages 10-0 to 11-11

PICTURE COMPLETION

If SS is	
1-3 no s.	_____ appeared severely deficient in visual alertness.
with scat.	_____ appeared severely deficinet in visual elertness.
4-5 no s.	_____ exhibited deficient visual alertness and visuel memory for common aspects in the environment.
with scat.	_____ exhibited deficient and sporadic visual alertness and visual memory for common aspects in the environment.
6-8 no s	A weakness was exhibited in visual alertness and the ability to revisualize common objects with all their details.
with scat.	_____ had a weak end sporadic visual awareness. This would interfere with visual discrimination for words
9-11 no s.	_____ exhibited normal visual elertness and long-term visual memory. This means _____ can revisuelize common objects with all of their details.
with scat.	_____ exhibited normal but sporadic visual alertness and long-term visuel memory. This means _____ can revisuelize common objects with most of their details.
12-15	_____ was above average in visuel alertness and long-term visual memory. This means _____ was able to revisualize common objects with all of their details.
16 up	_____ was able to revisuelize common objects with all of their details which indicated superior visuel alertness.

Ages 10-0 to 11-11

MAZES

If SS is	
1-3	_____ showed severe deficiency in the ability to plan ahead and carry out perceptual-motor activities.
4-5	_____ showed a deficiency in the ability to plan ahead and carry out perceptual-motor activities.
6-8	Some weakness was noted in the ability to plan ahead and carry out perceptual-motor activities.
9-11	Same as 6-0 to 7-11
12-15	Same as 6-0 to 7-11
16 up	Same as 6-0 to 7-11

For ages 12-0 to 13-11 and 14-0 to 16-11

1-3	Same as ages 10-0 to 11-11
4-5	Same as ages 10-0 to 11-11
6-8	Same as ages 10-0 to 11-11
9-11	Same as ages 6-0 to 7-11
12-15	Same as ages 6-0 to 7-11
16 up	Same as ages 6-0 to 7-11

Ages 10-0 to 11-11

ARITHMETIC

(as a relative strength)

If SS is	
2-3	_____ exhibited a strength, relative to _____ overall very limited ability, in arithmetic.
4-5	_____ exhibited a strength, relative to _____ overall limited ability, in mathematical foundations, such as multidigit addition and subtraction. Although this represents below average ability for others _____ age it was above _____ average score.
6-8	_____ exhibited a strength, relative to _____ overall ability, in mathematical foundations such as multidigit addition and subtraction.
9-11	_____'s numerical reasoning was average for _____ age. This indicated a strength compared to _____ average performance.

(as a relative weakness)

9-11	_____'s numerical reasoning was average for _____ age. _____ was able to apply basic mathematical procedures in personal-social problem solving. Although this was average for _____ age level, it represented a weakness relative to _____ generally high ability.
12-15	_____ exhibited a weakness in arithmetic, compared to _____ overall superior abilities. This is not uncommon since children do not usually study math that has not been presented in class as they will read and increase their verbal skills independently.

Ages 10-0 to 11-11

MAZES

(as a relative strength)

If SS is	
3-4-5	_____ showed some strength, relative to _____ overall very limited ability, in the ability to plan ahead and carry out perceptual-motor activities.
6-8	_____ showed some strength, relative to _____ overall ability, in the ability to plan and carry out perceptual-motor activities.
9-11	Same as for ages 6-0 to 7-11

(as a relative weakness)

9-11	Same as for ages 6-0 to 7-11
12-15	Same as for ages 6-0 to 7-11

Ages 10-0 to 11-11

RECOMMENDATIONS

(If the Verbal IQ is 70 or less and no scaled score is above 6, PRINT)

1, 2, 3, and 4 same as 8-0 to 9-11.

5 Ameliorating activities in arithmetic include

a. Single-digit addition and subtraction
b. Multidigit addition and subtraction without regrouping
c. Recognizing coins and their value
d. Telling time to the hour

(If the condition at the top is not met, pick up the lowest two, or if necessary three subtest)

(If one of the lowest subtest scores is in Information, Similarities, Comprehension, Digit Span or Vocabulary--use the statements from the recommendations of the 8-0 to 9-11 pages.)

(If one is in Arithmetic, PRINT)

Special help is needed in computational skills, including

a. Writing numerals in sequence to 1,000
b. Single-digit addition and subtraction using rote memory
c. Multidigit addition subtraction without regrouping

(If the Performance IQ is 70 or less and no scaled score is above 6, PRINT)

(1, 2, 3, and 4 are the same as ages 8-0 to 9-11)

5 Ameliorating activities in psychomotor coordination include

a Geometric drawings
b. Puzzles
c. Cursive writing drills (using circles, spirals, slanted lines, etc.)
d. Motor speed activities

(All of the Performance subtest recommendations are the same as 8-0 to 9-11 except Block Design)

(If one of the lowest subtests is Block Design, PRINT)

Special attention should be given to training in visual perception
Ameliorating activities include

a. Parquetry blocks
b. Geometric drawings
c. Visual discrimination worksheets
d. Spatial relationships worksheets

Ages 12-0 to 13-11

All analytical statements can be found in previous age groups except for those for Arithmetic and Vocabulary, which are on the following pages. New recommendations also follow.

Ages 12-0 to 13-11

ARITHMETIC

If SS is	
1-3 no s.	_____ was very deficient in arithmetic skills such as simple addition and subtraction.
with scat.	Some lack of consistency was noted in _____ ability to understand simple arithmetic concepts.
4-5 no s.	_____ exhibited the ability to add and subtract single-digit problems but was weak in computational skills. _____ is deficient in such skills compared to chronological peers.
with scat.	_____ exhibited some simple computational skills but lacks consistency in _____ mathematical foundations such as addition and subtraction. This constitutes deficient performance in arithmetic.
6-8 no s.	_____ was weak in multiplication and division when presented with oral problems.
with scat.	_____ exhibited some computational skills but lacks consistency in _____ mathematical foundations.
9-11 no s.	_____'s numerical reasoning is average for _____ age. _____ is able to apply basic mathematical procedures in personal-social problem solving.
with scat.	_____ exhibited an averaga ability to use basic arithmetic procedures but showed some inconsistency in applying these procedures.
12-16 no s.	_____ displayed a strength in applying mathematical procedures. _____ above average skills indicated a solid foundation in utilization of basic arithmetic procedures in personal-social problem solving.

If SS is

with scat

_____ exhibited a definite strength in applying mathematical concepts and procedures but displayed some gaps that would suggest _____ be encouraged to recheck work. It appeared _____ had the basic arithmetic skills but tended to make errors.

---

16 up no s

_____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.

with scat.

_____ exhibited superior computational skills. Superior application of mathematical concepts and procedures were noted.

Ages 12-0 to 13-11

VOCABULARY

If SS is

1-3 no s. _____ had an extremely limited receptive and/or expressive vocabulary for a student of _____ age. _____ understanding of the meaning of words is comparable to the normal six to eight year old

with scat. _____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicates a weakness in oral vocabulary.

4-5 no s. _____ was deficient in oral vocabulary. _____ had a definite weakness in understanding the meaning of words in common usage among other children _____ age. _____ oral vocabulary is comparable to a child of eight.

with scat. _____ understanding of the meaning of words were sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicates a weakness in oral vocabulary.

6-8 no s. A slight weakness was noted in _____ understanding of the meaning of commonly used words.

with scat. A slight weakness was exhibited in oral language development with lack of uniformity in the development. _____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ vocabulary

---

9-11 no s. _____ exhibited a normal language development with an understanding of the meaning of words comparable to others of the same age.

with scat. _____ exhibited normal language development with slightly more variability than other children _____ age.

12-15 no s. Mature language development was displayed. _____ understood the meaning of more words than many children of _____ age and expressed this strength fluently

If SS is

with scat.	_____ fund of verbal information is well above normal but some gaps were noted at lower levels of language develop-ment.

---

16 up no s.	Precocious language development was displayed. _____ has a superior fund of verbal information and gives high-quality definitions for words.
with scat.	Precocious language development was displayed. _____ has a superior fund of verbal information and gives high-quality definitions for words.

Ages 12-0 to 13-11

RECOMMENDATIONS

(If the Verbal IQ is 70 or less and no scaled force is above 6, PRINT all of the following.)

1. An appropriate educational plan for _____ would include ameliorating strategies in oral language development, auditory memory, auditory association and arithmetic skills.

2. Oral language development should stress both receptive and expressive vocabulary. The Peabody Language Development Kit, Word Craft or similar programs are suggested as possible resources for language development

3. Suggested activities in auditory memory include

   a. Repeating digits forward and reversed
   b. Repeating simple sentences, verbatim
   c. Repeating groups of unrelated words of gradually increasing length
   d. Listening for main points of a story

4. Suggested activities in auditory decoding (or association) include

   a. Discriminating rhyming and non-rhyming words
   b. Auditory association drills (e.g., what goes with _____?)
   c. Recognizing similarities and differences
   d. Recognizing logical and/or absurd statements

5. Ameliorating activities in arithmetic include

   a. Writing numerals in sequence to 1,000
   b. Identify the number that comes before and after a given number
   c. Write by 2's, 5's, and 10's through 50
   d. Identify the value of coins and bills through $20
   e. Multidigit addition and subtraction without regrouping
   f. Introduce the "carrying" and "borrowing" functions
   g. Introduce multiplication

(If the conditions above are not met, pick up the two or three lowest subtest scores.)

RECOMMENDATIONS--Continued

(If one of the lowest scores is in Information, PRINT)

1. Special attention is needed in helping _____ acquire common knowledge. Training is needed in

   a. Common happenings and current events
   b. Local and national news
   c. Calendar facts (such as the number of days in a week, month, or year; seasons, and holidays)
   d. Important facts (including a wide variety of aspects such as a few important presidents of the U.S., inventors, space explorations, geography, body functions, occupations, etc.)

(If one is in Similarities, PRINT)

1. Special instruction in conceptual development is suggested with abstract concepts being stressed. Help _____ learn to group things by classification and place things into appropriate categories.

(If one is in Arithmetic, PRINT)

1. Special help is needed in computational skills including

   a. Review addition and subtraction facts including regrouping
   b. Review single-digit multiplication and division
   c. Introduce multidigit multiplication

(If one is in Comprehension, PRINT)

1. Special instruction in logical problem solving is suggested. Teach what and why facts such as

   a. What do we do about special needs or problems?
   b. Why do we have teachers, police, doctors, etc.?
   c. Why do we behave in particular ways?
   d. Who discovered (or invented) particular things?
   e. Wht do political leaders do to help the people?

(If one is in Digit Span, PRINT)

1. Ameliorating activities in auditory memory include

   a. Repeating digits forward and reversed
   b. Repeating groups of unrelated words of gradually increasing length
   c. Repeating sentences of gradually increasing length and complexity

RECOMMENDATIONS--Continued

d. Listening for main points of a story
e. Repeating facts in a proper sequence

(If one is Vocabulary, PRINT)

1. Oral language development should stress both receptive and expressive vocabulary The Peabody Language Development Kit, Word Craft or similar programs are suggested as possible resources for language development

RECOMMENDATIONS--Continued

(If the Performance IQ is 70 or less and no scaled score is above 6, PRINT)

1. An appropriate educational plan for _____ would include ameliorating strategies in visual perception, visual memory, sequencing and psycho-motor coordination.

2. Suggested activities in visual perception include

   a. Puzzles
   b. Parquetry blocks
   c. Visual discrimination worksheets
   d. Spatial relationships worksheets
   e. Word discrimination worksheets

3. Ameliorating activities in visual memory include

   a. Recalling a sequence of events shortly after watching the action
   b. Visual memory drills

4. Visual sequencing activities include

   a. Cut up comic strips to learn sequence of events
   b. Copy sequences of beads, blocks, et.c

5. Ameliorating activities in psychomotor coordination include

   a. Geomatric drawings
   b. Puzzles
   c. Athletic activities
   d. Computer games

(If the conditions above are not met, pick up the two or three lowest subtest scores.)

(If one of the lowest subtests in Picture Completion, PRINT)

1. Special attention should be given to strengthening visual alertness. The student should be encouraged to discuss details of objects to improve observation skills.

(If one of the lowest subtests is Picture Arrangement, PRINT)

1. Ameliorating activities in visual sequencing are recommended. Suggested activities include

   a. Cut up comic strips to learn the proper sequence of events
   b. Copy sequences of beads, blocks, etc

RECOMMENDATIONS--Continued

(If one of the lowest subtests is Block Design, PRINT)

1. Special attention should be given to training in visual perception. Ameliorating activities include

   a. Geometric drawings
   b. Visual discrimination worksheets
   c Spatial relationships worksheets

(If one of the lowest subtests is Object Assembly, PRINT)

1. Perceptual training emphasizing part-to-whole organization such as puzzles is recommended

(If one of the lowest subtests is Coding, PRINT)

1. Training is needed in psychomotor tasks. Special attention needs to be given to fine motor coordination, motor speed, and visual memory

(If one of the lowest subtests is Mazes, PRINT)

1. Special attention needs to be given to eye-hand coordination

Ages 14-0 to 16-11

Only the Vocabulary section and the recommendations required modification of previous systems model statements Those pages follow.

Ages 14-0 to 16-11

VOCABULARY

If SS is

1-3 no s. _____ had an extremely limited receptive and/or expressive vocabulary for a student of _____ age. _____ understood the meaning of words comparable to the normal eight to nine year old.

with scat. _____ understanding of the meaning of words was sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicated a weakness in oral vocabulary.

4-5 no s _____ was deficient in oral vocabulary. _____ had a definite weakness in understanding the meaning of words in common usage among other students _____ age. _____ oral vocabulary is comparable to a child of ten.

with scat. _____'s understanding of the meaning of words was sporadic such that more commonly used words were not within _____ receptive vocabulary. This indicated a weakness in oral vocabulary.

6-8 no s A slight weakness was noted in _____ understanding of the meaning of commonly used words.

with scat A slight weakness was exhibited in oral language development with lack of uniformity in the development. _____'s understanding of the meaning of words was sporadic such that more commonly used words were not within _____ vocabulary.

9-11 no s. _____ exhibited a normal language development with an understanding of the meaning of words comparable to others of the same age.

with scat _____ exhibited normal language development with slightly more variability than other children _____ age.

If SS is	
12-15 no s	Mature language development was displayed. _____ understood the meaning of more words than many students of _____ age and expressed this strength fluently.
with scat.	_____'s fund of verbal information is well above normal but some gaps were noted at lower levels of language development.
16 up no s.	Precocious language development was displayed. _____ has a superior fund of verbal information and gave high-quality definitions for words.
with scat.	Same as above.

Ages 14-0 to 16-11

RECOMMENDATIONS

(If the Verbal IQ is 70 or less and no scaled score is above 6, PRINT all of the following.)

1. An appropriate educational plan for _____ would include ameliorating strategies in oral language development, auditory memory, auditory association and arithmetic skills.

2. Oral language development should stress both receptive and expressive vocabulary. Word Craft or similar programs are suggested as possible resources for language development.

3. Suggested activities in auditory memory include

   a. Repeating digits forward and backward
   b. Repeating sentences of increasing length and complexity
   c. Repeating groups of unrelated words of gradually increasing length
   d. Listening for main points of a story

4. Suggested activities in auditory decoding (or association) include

   a. Discriminating rhyming and non-rhyming words
   b. Auditory association drills (e.g., What goes with _____?)
   c. Recognizing similarities and differences
   d. Recognizing logical and/or absurd statements

5. Ameliorating activities in arithmetic include

   a. Writing by 2's, 5's, and 10's through 100
   b. Identify the value of coins and bills through $100
   c. Multidigit addition and subtraction with regrouping
   d. Simple multiplication and division
   e. Introduce fractions

(If the conditions above are not met, pick up the two or three lowest subtest scores.)

(If one of the lowest scores is in Information, PRINT)

1. Special attention is needed in helping _____ acquire common knowledge. Training is suggested in

   a. Common happenings and current events
   b. Local and national news

RECOMMENDATIONS--Continued

c. Review calendar facts (such as the number of days in a week, month, or year, seasons, and holidays) are as needed
d. Important facts (including a wide variety of aspects such as world events, presidents of the U.S., inventors, space explorations, geography, body functions, occupations, etc.)

(If one is in Similarities, PRINT)

1. Special instruction in conceptual development is suggested wtih abstract concepts being stressed. Help _____ learn to group things by classification and place things into appropriate categories.

(If one is in Arithmetic, PRINT)

1. Special help in needed in computational skills including

a. Review addition and subtraction facts including regrouping
b. Review multiplication and division

(If one is in Comprehension, PRINT)

1. Special instruction in logical problem solving is suggested. Teach who, what, and why facts such as

a. What do we do about special needs or problems?
b. Why do we behave in particular ways?
c. Who discovered (or invented) particular things?
d. What do political leaders do to help the people?

(If one is in Digit Span, PRINT)

1. Ameliorating activities in auditory memory include

a. Repeating digits forward and reversed
b. Repeating groups of unrelated words of gradually increasing length
c. Repeating sentences of gradually increasing length and complexity
d. Listening for main points of a story
e. Repeating facts in a proper sequence

(If one is in Vocabulary, PRINT)

1. Oral language development should stress both receptive and expressive vocabulary. Word Craft or similar programs are suggested as possible resources for language development.

RECOMMENDATIONS--Continued

(If the Performance IQ is 70 or less and no scaled score is above 6, PRINT)

1. An appropriate educational plan for _____ would include ameliorating strategies in visual perception, visual memory, sequencing and psychomotor coordination

2. Suggested activities in visual perception include

   a. Puzzles
   b. Spatial relationships worksheets
   c. Word discrimination worksheets

3. Ameliorating activities in visual memory include

   a. Recalling a sequence of events shortly after watching the action
   b. Visual memory drills

4. Visual sequencing activities include

   a. Cut up comic strips to learn sequence of events
   b. Copy sequence of beads, blocks, etc.

5. Ameliorating activities in psychomotor coordination include

   a. Geometric drawings
   b. Puzzles
   c. Athletic activities
   d. Computer games

(If the conditions above are not met, pick up the two or three lowest subtest scores.)

(If one of the lowest subtests is Picture Completion, PRINT)

1. Special attention should be given to strengthening visual alertness. The student should be encouraged to discuss details of objects to improve observation skills

(If one of the lowest subtests is Picture Arrangement, PRINT)

1. Amelioratign activities in visual sequencing are recommended. Suggested activities include:

   a. Cut up comic strips to learn the proper sequence of events
   b. Copy sequences of beads, blocks, etc.

RECOMMENDATIONS--Continued

(If one of the lowest subtests is Block Design, PRINT)

1. Special attention should be given to training in visual perception. Ameliorating activities include

   a. Geometric drawings
   b. Visual discrimination worksheets
   c. Spatial relationships worksheets

(If one of the lowest subtests is Object Assembly, PRINT)

1. Perceptual training emphasizing part-to-whole organization such as puzzles is recommended

(If one of the lowest subtests is Coding, PRINT)

1 Training is needed in psychomotor tasks. Special attention needs to be given to fine motor coordination, motor speed, and visual memory.

(If one of the lowest subtests is Mazes, PRINT)

1 Special attention needs to be given to eye-hand coordination

REFERENCES

Allison, J., Blatt, S. J., & Zimet, C. N. The interpretation of psychological tests. New York: Harper & Row, 1968.

Anastasi, A. Psychological testing. London: Macmillan, 1968.

Anderson, B. F. The psychology experiment: An introduction to the scientific method. Belmont, Calif.: Wadsworth, 1966.

Apter, M. J. & Wesby, G. The computer in psychology. London: John Wiley & Sons, 1973.

Bardon, J. I. & Bennett, V. C. School psychology. Englewood Cliffs, New Jersey: Prentice-Hall, 1974.

Boneau, C. A. The effects of violations of assumptions underlying the t test. Psychological Bulletin, 1960, 57, 49-64.

Brooks, R. & Kleinmuntz, B. Design of an intelligent computer psychodiagnostician. Behavioral Science, 1974, 19, 16-20.

Buktenica, N. A. Interpretation of clinical data by the school psychologist. Psychology in the Schools, 1964, 1, 267-272.

Burgdorf, M. P. & Burgdorf, R. A history of unequal treatment: The qualifications of handicapped persons as a "suspect class" under the equal protection clause. Santa Clara Lawyer, 1975, 15, 855-875.

Dunn, J. A. On growth of school psychology. Psychology in the Schools, 1965, 2(2), 110-112.

Education of the Handicapped. Washington, D.C.: Capital Publications, Oct. 24, 1979.

English, H. B. & English, A. C. A comprehensive dictionary of psychological and psychoanalytical terms. New York: McKay, 1958.

Elwood, D. L. Automation of psychological testing. American Psychologist, 1969, 24, 267-289.

Florida Association of School Psychologists. School psychology standards of practice. Tallahassee: Author, 1979.

Florida Department of Education. Accreditation standards. Tallahassee: Author, 1971.

Florida Department of Education. State board of education administrative rules. Tallahassee: Author, 1978.

Gottsengen, M. G. The role of the school psychologists. In M. G. Gottsengen & G. B. Gottsengen (Eds.). Professional school psychology. New York: Grune & Stratton, 1960.

Griffiths, D. E. Administrative theory. New York: Appleton-Century-Crofts, 1955.

Haggerty, D. & Sacks, E. Education of the handicapped: Toward a definition of an appropriate education. Temple Law Quarterly, 1977, 50, 961-994.

Halpern, F. The individual psychological examination. In M. G. Gottsengen and G. B. Gottsengen (Eds.). Professional school psychology. New York: Grune & Stratton, 1960.

Hayes, M. E. & Clair, T. N. School psychology--Why is the profession dying? Psychology in the Schools, 1978, 15, 518-521.

Holtzman, W. H. Can the computer supplant the clinician? Journal of Clinical Psychology, 1960, 16, 119-122.

Holzberg, J. D., Alessi, S. L., & Wexler, M. Psychological case reporting at psychiatric staff conferences. Journal of Consulting Psychology, 1951, 15, 425-429.

Johnson, D. J. & Myklebust, H. R. Learning disabilities: Educational principles and practices. New York: Grune & Stratton, 1967.

Kast, F. E. & Rosenzweig, J. E. Organization and management: A systems approach. New York: McGraw-Hill, 1970.

Kast, F. E. & Rosenzweig, J. E. Organization and management: A systems approach (2nd ed.). New York: McGraw-Hill, 1974.

Keogh, B. K., Kukic, S. J., Becker, L. D., McLoughlin, R. J., & Kukic, M. B. School psychologists' services in special education programs. Journal of School Psychology, 1975, 13(2), 142-147.

Kleinmuntz, B. The computer as clinician. American Psychologist, 1976, 30, 379-386.

Klopfer, W. The psychological report: Use and communication of psychological findings. New York: Grune & Stratton, 1960.

Lebank v. Spears, 60 F. R. D. 135 (1973).

Lefrançois, G. R. Of children. Belmont, Calif.: Wadsworth, 1980.

Lerner, J. W. Children with learning disabilities: Theories, diagnosis, and teaching strategies. Boston: Houghton Mifflin, 1971.

Leton, D. A. School psychology: Its purpose and direction. Psychology in the Schools, 1964, 1, 187-190.

Littell, W. M. The Wechsler Intelligence Scale for Children: Review of a decade of research. Psychological Bulletin, 1960, 57, 132-155.

Maloney, M. P. & Ward, M. P. Psychological assessment: A conceptual approach. New York: Oxford University Press, 1976.

Mattie T. v. State of Mississippi, No. DC-75-31-S (N.D. Miss. Jan. 26, 1979).

Meehl, P. E. Wanted--A good cookbook. American Psychologist, 1956, 11, 263-272.

Mussman, M. C. Teachers' evaluation of psychological reports. Journal of School Psychology, 1964, 3, 35-37.

Newell, A. & Simon, H. A. Computer simulation of human thinking. Science, 1961, 134, 2011-2017.

Palmer, J. O. The psychological assessment of children. New York: John Wiley & Sons, 1970.

Public Law 94-142, 20 U.S.C. 1401 et seq.

Rapaport, D., Gill, M. M. & Schafer, R. Diagnostic psychological testing. London: University of London Press, 1968.

Robinson, J. O. The computer in clinical psychology. In Apter, M. J. & Mesby, G. The computer in psychology. London: John Wiley & Sons, 1973, pp. 221-243.

Rucker, C. N. Technical language in the school psychologist's report. Psychology in the Schools, 1967, 4, 146-150.

Shapiro, R. A computerized WISC report: Rules for making descriptive statements of intellectual functioning (Doctoral dissertation, Long Island University, 1974). Dissertation Abstracts International, 1974, 35(2b), 10638. (University Microfilms No. 74-17, 713, 329.)

Stetler, L. Handicapped students see new gains. Florida Schools, 1979, 41(4), 1-2.

Strang, R. Reading diagnosis and remediation. Newark, Del.: International Reading Association, 1968.

Terman, L. M. & Merill, M. A. Stanford-Binet Intelligence Scale. Boston: Houghton Mifflin, 1973.

Valett, R. E. The remediation of learning disabilities. Palo Alto, Calif.: Fearon, 1967.

Wechsler, D. Manual for the Wechsler Adult Intelligence Scale. New York: The Psychological Corporation, 1955.

Wechsler, D. Manual for the Wechsler Preschool and Primary Scale of Intelligence. New York: The Psychological Corporation, 1967.

Wechsler, D. Manual for the Wechsler Intelligence Scale for Children--Revised. New York: The Psychological Corporation, 1974.

Weintraub, F. & Abeson, A. Appropriate education for all handicapped children: A growing issue. Syracuse Law Review, 1972, 23, 1037-1058.

White, M. A. & Harris, M. W. The school psychologist. New York: Harper, 1961.

BIOGRAPHICAL SKETCH

Effie Lorene Hall was born July 8, 1935, at Harlingen, Texas She attended public schools in and around Fort Worth, Texas, and graduated from Technical High School there in 1954. In 1954, she entered the Waves, the female branch of the U.S. Navy, and served for three years.

In 1966, she received the degree Associate of Arts from Pensacola Junior College, Pensacola, Florida. In June 1969, she was awarded the degree Bachelor of Arts as a member of the charter class of the University of West Florida, Pensacola, Florida, and in 1971, she was awarded the degree of Master of Arts with concentration in psychology and guidance.

Upon completion of her Master of Arts, she was employed as a school psychologist to serve two small school districts in Florida, Hernando and Sumter. She continued in Sumter and was later promoted to the position of Coordinator of Special Programs while still providing psychological services.

Mrs. Hall is married to Franklin W. Hall, Jr. They are parents of three children, Vicky, Michael, and Lori She is a member of the Florida Association of School Psychologists and the Coordinators and Administrators of Special Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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March 1981

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